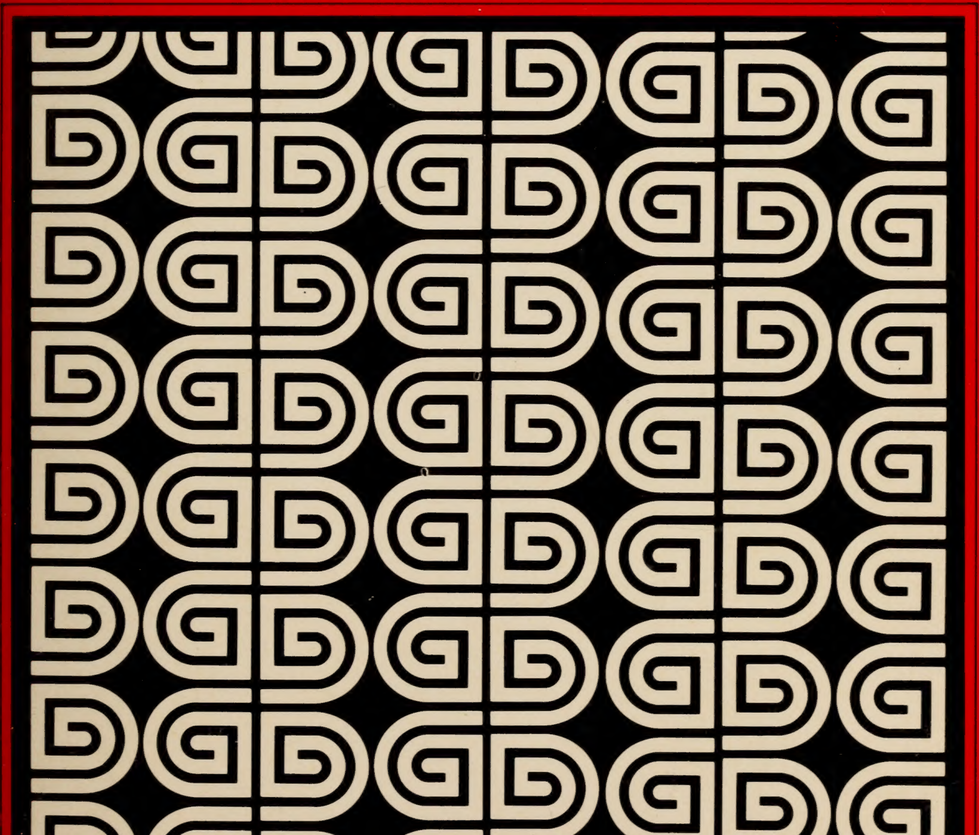
The University of Georgia
Bulletin 1977-79

Graduate School



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The statements set forth in the Graduate School Bulletin of the University of Georgia are for informational purposes only and should not be construed as the basis of a contract between the student and the institution.

While the provisions of this Bulletin will ordinarily be applied as stated, the University of Georgia reserves the right to change any provisions listed in the Bulletin, including but not limited to academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Graduate School. It is especially important that students note that it is their responsibility to keep themselves apprised of current graduation requirements for their particular degree programs.

* * *

The University of Georgia complies with the Civil Rights Act of 1964 and is an equal opportunity affirmative action employer.

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GRADUATE SCHOOL CALENDAR 1977–79

Fall Quarter 1977

September 20
Residence halls open
September 21
Late Registration
September 22
Classes begin
November 23–27
Thanksgiving recess
December 1
Classes end
December 2
Reading day
December 5–8
Examinations
December 9
Vacation begins

Winter Quarter 1978

January 2
Residence halls open
January 3
Late Registration
January 4
Classes begin
March 10
Classes end
March 11
Reading day
March 13–16
Examinations
March 17
Spring recess begins

Spring Quarter 1978

March 26
Residence halls open
March 27
Late Registration
March 28
Classes begin
June 1
Classes end
June 2
Reading day
June 5–8
Examinations
June 12
Graduation

Summer Quarter 1978

June 13
Residence halls open
June 14
Late Registration
June 15
Classes begin
July 3–4
Holiday
July 21
Short term classes end
July 22
Reading day
July 24–25
Short term examinations
August 11
Through term classes end
August 12
Reading day
August 14–16
Through term examinations

Fall Quarter 1978

September 20
Residence halls open
September 21
Late Registration
September 22
Classes begin
November 22–26
Thanksgiving recess
December 1
Classes end
December 4
Reading day
December 5–8
Examinations
December 9
Vacation begins

Winter Quarter 1979

January 2
Residence halls open
January 3
Late Registration
January 4
Classes begin
March 12
Classes end
March 13–16
Examinations
March 17
Spring recess begins

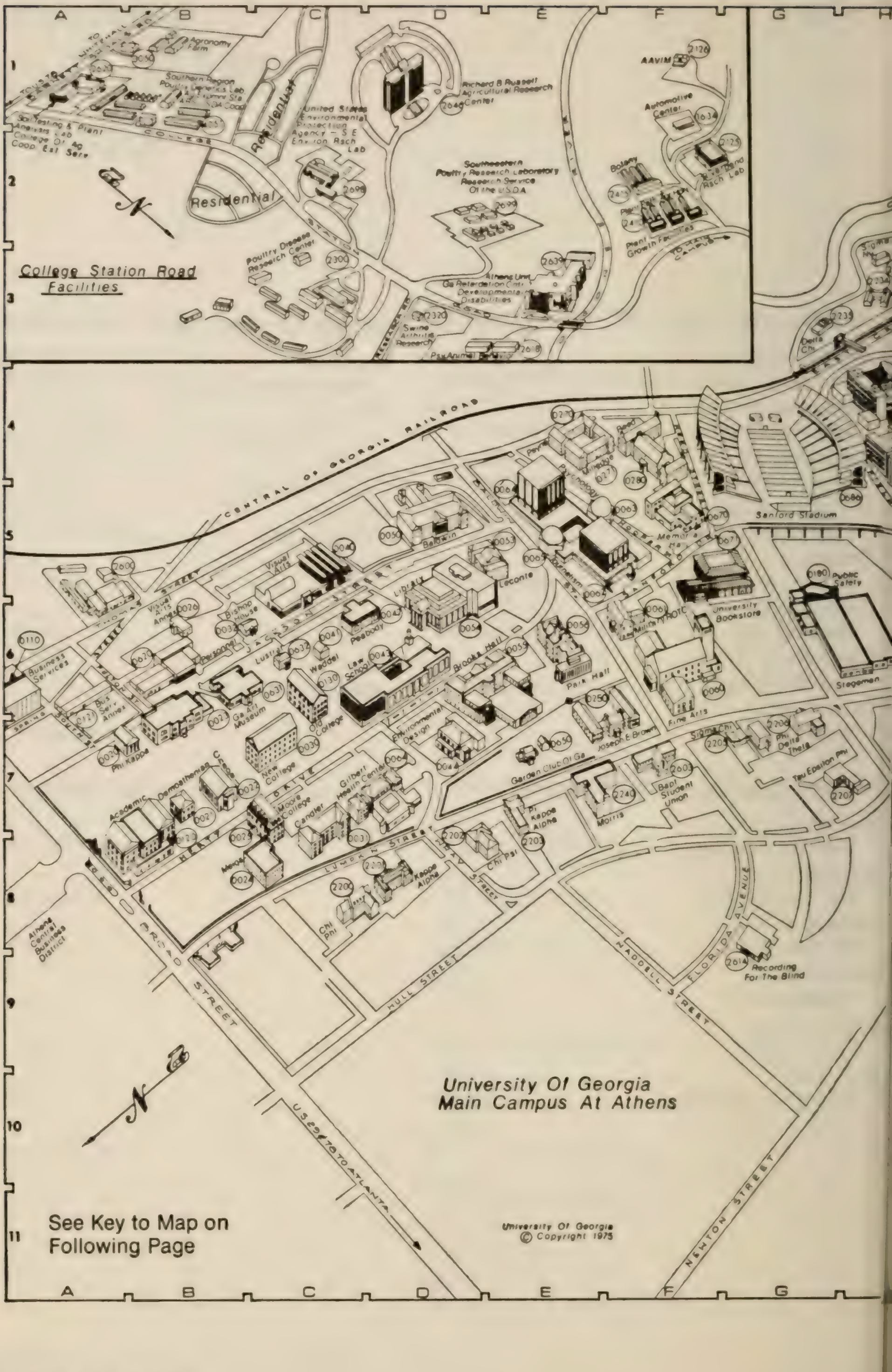
Spring Quarter 1979

March 25
Residence halls open
March 26
Late Registration
March 27
Classes begin
May 31
Classes end
June 1
Reading day
June 4–7
Examinations
June 11
Graduation

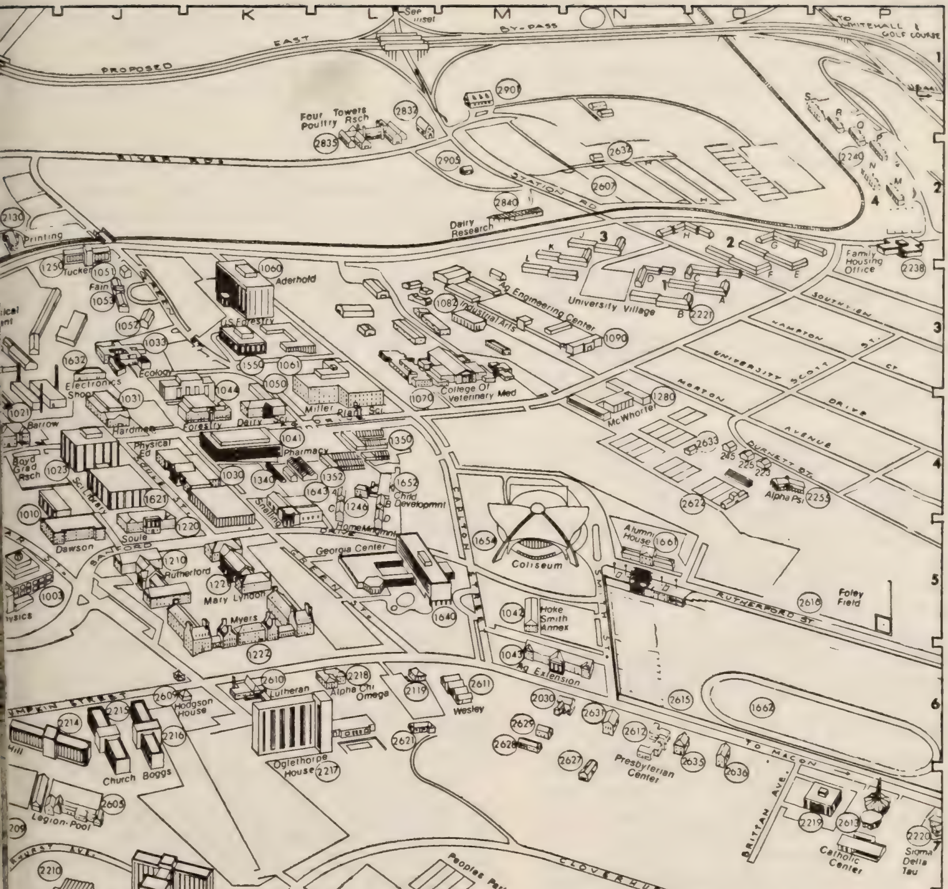
Summer Quarter 1979

June 14–August 15

CAMPUS MAP



See Key to Map on Following Page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1
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PROPOSED
EAST
BY-PASS
TO WHITEHALL & GOLF COURSE
RIVER RD.
STATION RD.
Four Towers Poultry Rsch
2835
2832
2901
2905
2632
2607
2840
Dairy Research
2240
Family Housing Office
2238
Printing
2130
1250
Tucker
1051
Fain
1053
1052
1033
1060
Aderhold
US Forestry
1550
1061
1632
Electronics Shop
Ecology
1031
1044
1050
1021
Barrow
Hardman
Forestry
Dairy Sci.
Miller Plant Sci.
Boyd Grad Rsch
1023
Physical Ed
1041
Pharmacy
1350
1030
1340
1352
1643
1652
Child Development
1246
Home Mngmnt
Snelling
1621
Sci. Library
1010
1220
Soule
Dawson
1210
Rutherford
1003
Physics
Georgia Center
1640
1221
Mary Lyndon
Myers
1222
1082
Industrial Arts
Ag Engineering Center
1090
1070
College Of Veterinary Med
University Village
2221
1280
McWhorter
2633
245
225
223
Alpha Psi
2255
2622
1654
Coliseum
Alumni House
1661
2618
Foley Field
1042
Hoke Smith Annex
1043
Ag Extension
2615
1662
SOUTHVIEW
HAMPTON
ST.
CT
UNIVERSITY
SCOTT
DRIVE
MORTON
AVENUE
DURNETT ST.
CARLTON
RUTHERFORD ST
TO MACON
BRITTAIN AVE.
GREEN ST.
SANFORD DRIVE
LUMPKIN STREET
2609
Hodgson House
2610
Lutheran
2218
Alpha Chi Omega
2119
2611
Wesley
2030
2631
2629
2628
2627
2612
Presbyterian Center
2635
2636
2219
2613
Catholic Center
2220
Sigma Delta Tau
2214
2215
2216
Hill
Church
Boggs
Oglethorpe House
2217
2621
2605
Legion Pool
2209
2210
Bolton
2211
Creswell
Peoples Park
CLOVERHURST AVENUE
BAXTER
FINLEY STREET
STREET
2212
Russell
2213
Brumby
CHURCH STREET
SPRINGDALE ST.
HALL STREET
TALMADGE STREET
PEABODY STREET
UGA
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CAMPUS MAP KEY

1. Academic Building (Student Affairs, Financial Aid, Registrar, Honors Program, Admissions), 7–B
2. Aderhold Building (College of Education), 2–K
3. Administrative Data Processing Building, 5–A
4. Agricultural Engineering Center, 2–M
5. Agricultural Extension Building, 5–N
6. Alpha Chi Omega Sorority, 5–L
7. Alpha Epsilon Pi Fraternity, 1–I
8. Alpha Tau Omega Fraternity, 2–H
9. Alumni House (Alumni Relations),4–N
10. Baldwin Hall (Sociology, Anthropology, Political Science), 4–D
11. Baptist Student Union, 6–F
12. Barrow Hall (Dean, College of Agriculture, Electron Microscopy Lab, Safety Services), 3–I
13. Baseball Field, 4–P
14. Biological Sciences Building (Entomology, Microbiology, Zoology), 3–H
15. Bishop House (Art), 5–C
16. Boggs Hall (Women's Residence), 5–J
17. Bolton Hall Cafeteria, 7–J
18. Boyd Graduate Studies Research Center (Computer Center, Mathematics, Statistics, Biochemistry, Dean, Graduate School, Vice President for Research), 3–J
19. Brumby Hall (Women's Residence), 9–M
20. R. Preston Brooks Building, 5–E
21. Business Services Building, 5–A
22. Business Services Annex, 5–A
23. Candler Hall (Institute of Higher Education), 7–C
24. Catholic Center, 6–P
25. Chapel, 6–B
26. Chemistry Building, 3–H
27. Child Development Laboratory, 3–L
28. Chi Phi Fraternity, 7–C
29. Chi Psi Fraternity, 7–E
30. Church Hall (Women's Residence), 5–J
31. Clark Howell Hall (Career Placement), 5–I
32. Coliseum (Athletic Department), 4–N
33. Conner Hall, (Cooperative Extension Service), 3–I
34. Creswell Hall (Women's Residence), 7–K
35. Dairy Farm, 1–L
36. Dairy Science Creamery, 3–K
37. Dawson Hall (School of Home Economics), 3–J
38. Delta Chi Fraternity, 2–H
39. Delta Phi Epsilon Sorority, 6–P
40. Demosthenian Hall, 6–B
41. Dudley Hall (College of Education), 2–J
42. Ecology Building, 2–J
43. Environmental Design Building, 6–D
44. Fain Hall (College of Education), 2–J
45. Family Housing Office/Campus Station Post Office, 2–P
46. Family Housing (University Village), 2–O
47. Fine Arts Building (Music, Drama), 5–F
48. Food Science Building, 2–I
49. Forest Resources Building (Institute of Natural Resources), 2–K
50. Forestry Science Laboratory, 2–L
51. Forestry Science Lab Annex, 2–K
52. Garden Club of Georgia, Inc., and Memorial Gardens, 6–E
53. Geography, Geology, Speech Building, 4–I
54. Geology Hydrothermal Laboratory, 4–I
55. Georgia Center for Continuing Education, 4–L
56. Georgia Museum of Art, 5–C
57. Gilbert Health Center (University Health Services), 6–D
58. Greenhouses, 3–L
59. Griggs Hall (Arts & Sciences), 2–J
60. Hardman Hall (Air Force ROTC, Military Clothing), 3–J
61. Hill Hall (Women's Residence), 5–J
62. Hodgson House (Episcopalian Center), 5–K
63. Hoke Smith Annex (Cooperative Extension), 4–M
64. Home Management Courses (Home Economics), 3–L

65. Industrial Arts Building, 2–M
66. Joe Brown Hall (Music, Theatre), 6–F
67. Journalism Building, 4–F
68. Kappa Alpha Fraternity, 7–D
69. Kappa Sigma Fraternity, 2–H
70. Law School Building, 5–D
71. Learning Service Center (Social Work), 5–N
72. LeConte Hall (History), 4–E
73. Legion Pool, 6–J
74. Library, Main (Georgia Review), 5–D
75. Library, Science, 3–J
76. Lipscomb Hall (Men's Residence), 6–I
77. Livestock Poultry Building (Animal Science, Agricultural Economics, Dairy Science, Poultry Science), 2–H
78. 1088 S. Lumpkin St. (Auxiliary Enterprises), 5–M
79. 1238 S. Lumpkin St. (Pre-School—Home Economics), 5–N
80. 1242 S. Lumpkin St. (Art), 5–N
81. 1260 S. Lumpkin St., 5–O
82. 1280 S. Lumpkin St., 5–O
83. Lumpkin House (Rockhouse), 3–I
84. Lustrat House (President), 5–C
85. Lutheran Center, 5–K
86. Mary Lyndon Hall (Women's Residence), 4–K
87. Married Student Housing, 1–P
88. McWhorter Hall (Athletic Men's Residence), 3–N
89. Meigs Hall (Germanic & Slavic Languages, Environmental Design), 7–C
90. Mell Hall (Women's Residence), 6–I
91. Memorial Hall (University Union, Student Activities), 4–F
92. Military Science Building (Army ROTC), 5–F
93. Milledge Hall (Men's Residence), 3–F
94. Miller Plant Sciences Building (Botany, Agronomy, Horticulture, Plant Pathology), 2–L
95. Moore College (Romance Languages), 7–C
96. Morris Hall (Law & Graduate Men's Residence), 6–F
97. Myers Hall (Co-ed Residence), 4–K
98. New College (Dean, Arts & Sciences, Institutional Research, Career Planning, Internal Auditing), 6–C
99. Oglethorpe House (Private Co-Ed Residence), 5–L
100. Old College (Vice Presidents for Academic Affairs, Development and Service, ICAD, University Relations), 5–C
101. Park Hall (English, Comparative Literature, Classics, Literature), 5–E
102. Payne Hall (Men's Residence), 3–E
103. Peabody Hall (Philosophy & Religion), 5–D
104. Personnel Services Building (Mail Room), 5–B
105. Pharmacy Building, 3–K
106. Phi Delta Theta Fraternity, 6–G
107. Phi Kappa Hall, 6–B
108. Physical Plant, 2–I
109. Physics & Astronomy Building, 4–I
110. Pi Kappa Alpha Fraternity, 6–E
111. Post Office (Self-Service), 6–I
112. Poultry Research Laboratory, 1–J
113. Practice Fields, 5–O
114. Psychology Building, 4–E
115. Public Safety Building, 5–G
116. Recording for the Blind (Non-University), 8–G
117. Reed Hall (Co-ed Residence), 3–F
118. Russell Hall (Men's Residence, Housing and Off-Campus Housing Offices), 8–L
119. Rutherford Hall (Women's Residence), 4–J
120. Sanford Stadium, 3–G
121. Sigma Chi Fraternity, 6–G
122. Sigma Nu Fraternity, 2–H
123. Snelling Hall Cafeteria, 3–L
124. Soule Hall (Department of Offender Rehabilitation), 4–J
125 South Thomas Street Building (Art), 4–A
126. Stegeman Hall (Men's Physical Education), 5–H
127. Tau Epsilon Phi Fraternity, 6–H
128. Tennis Courts, 3–O
129. Terrell Hall (Institute of Government, Public Relations), 6–B
130. Track Field, 5–P
131. Tucker Hall (Social Work), 2–J
132. University Book Store, 4–G
133. Veterinary Medicine Building, 2–M
134. Visual Arts Building (Art), 4–C
135. Visual Arts Annex, 5–B
136. Waddel Hall (University Press), 5–C
137. Wesley Foundation (Methodist Center), 5–M
138. Women's Physical Education Building, 3–K

UNIVERSITY SYSTEM OF GEORGIA

BOARD OF REGENTS

Jesse Hill, *Atlanta*
State-at-Large (1973–1978)

Rufus B. Coody, *Vienna*
State-at-Large (1976–1983)

Milton Jones, *Columbus*
State-at-Large (1974–1981)

Lamar R. Plunkett, *Bowdon*
State-at-Large (1974–1981)

O. Torbitt Ivey, Jr., *Augusta*
State-at-Large (1977–1984)

Erwin A. Friedman, *Savannah*
First District (1976–1983)

Charles T. Oxford, *Albany*
Second District (1975–1982)

John H. Robinson, III, *Americus*
Third District (1972–1979)

Scott Candler, Jr., *Decatur*
Fourth District (1977–1984)

Elridge W. McMillan, *Atlanta*
Fifth District (1975–1982)

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Sixth District (1971–1978)

James D. Maddox, *Rome*
Seventh District (1973–1980)

Charles A. Harris, *Ocilla*
Eighth District (1971–1978)

P. Robert Smith, *Winder*
Ninth District (1973–1980)

Carey Williams, *Greensboro*
Tenth District (1972–1979)

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W. Coye Williams, Jr., *Vice Chancellor—Academic Development*

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THE UNIVERSITY OF GEORGIA

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  J. Ralph Beaird, *Counselor to the President*
  Albert Bruce Jones, *Assistant to the President*
  James Benson Kenney, *Assistant to the President*
  James L. Carmon, *Assistant to the President*

Vice President for Academic Affairs
Virginia Y. Trotter, *Vice President*
  Mary Louise McBee, *Assistant Vice President*
  James H. Buck, *Acting Assistant Vice President*
  Leroy Ervin, Jr., *Acting Assistant Vice President*
  Fred Thurman Colhard, *Assistant to the Vice President*
  Ernest W. Smith, *Assistant to the Vice President*
  Sidney Edward Brown, *Assistant to the Vice President*

Vice President for Research
Robert Cletus Anderson, *Vice President*
  Charles Herbert Douglas, *Assistant Vice President and Director of General Research*
  William Oates Burke, *Assistant to the Vice President and Director of University Research Park*

Vice President for Services
S. Eugene Younts, *Vice President*
  John D. Burke, *Assistant Vice President*
  Robert Louis Rowan, *Administrative Assistant*

Vice President for Development and University Relations
H. Perk Robins, *Vice President*
  J. Donald Elam, *Associate Vice President*
  Louis T. Griffith, *Assistant Vice President*

Vice President for Business and Finance
Allan Wedford Barber, *Vice President*
  Jenkins Comer Whitehead, *Assistant to the Vice President*

Student Affairs
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Registrar
Bruce T. Shutt, *Registrar*

Admissions
Morris Overton Phelps, *Director of Admissions*
  Claire Swann, *Associate Director*

THE GRADUATE SCHOOL

ADMINISTRATIVE OFFICERS

Hardy M. Edwards, Jr., B.S., M.S.A., Ph.D., *Dean*
Bradford N. Bunnell, B.A., Ph.D., *Associate Dean*
Harold W. Gentry, B.S., M.A., Ed.D., *Associate Dean and Coordinator of In-Service Graduate Studies*
Eugene L. Heric, B.S., M.S., Ph.D., *Assistant Dean and Coordinator of Instructional Institutes*
Marvin Blaine Doster, B.S., M.Ed., *Acting Director of Graduate Admissions*
Kermit R. Jeffers, B.S., M.Ed., *Assistant to the Dean*
Mary Ann Keller, A.B.J., *Administrative Assistant to the Dean*
Mabel C. O'Conner, *Administrative Assistant to the Dean*

COLLEGES AND SCHOOLS

College of Arts and Sciences (1801)
William J. Payne, *Acting Dean*

School of Law (1859)
J. Ralph Beaird, *Dean*

School of Pharmacy (1903)
Howard C. Ansel, *Dean*

College of Agriculture (1906)
Henry Wilbur Garren, *Dean*

School of Forest Resources (1906)
Allyn Marsh Herrick, *Dean*

College of Education (1908)
Joseph Anderson Williams, *Dean*

Graduate School (1910)
Hardy Malcolm Edwards, *Dean*

College of Business Administration (1912)
William Crawford Flewellen, Jr., *Dean*

School of Journalism and Mass Communication (1915)
Scott M. Cutlip, *Dean*

School of Home Economics (1933)
Emily Quinn Pou, *Dean*

College of Veterinary Medicine (1946)
David P. Anderson, *Dean*

School of Social Work (1964)
Charles Ashley Stewart, *Dean*

School of Environmental Design (1969)
Robert P. Nicholls, *Dean*

GENERAL INFORMATION

HISTORY, PURPOSE AND ORGANIZATION

Prior to the formal establishment of the Graduate School, courses of postgraduate status were offered under the control of a faculty committee on graduate studies. In 1910, the ormal organization of graduate studies into a Graduate School was authorized. Dr. Willis H. Bocock served as the Graduate School's first dean and was succeeded by R. P. Stephens, George H. Boyd, Gerald B. Huff, Thomas H. Whitehead, and the present dean, Hardy M. Edwards, Jr.

The Graduate School coordinates the raduate programs of all schools and colleges of he University. Matters of policy and procedure re determined by the graduate faculty through he graduate council. The graduate faculty con- ists of faculty members appointed by the Presi- ent on the basis of productive research, effec- ve teaching, and other creative activities. The olicies adopted by the graduate council are dministered by the Dean of the Graduate chool.

The traditional degrees, Master of Arts and Master of Science, are offered in 24 and 28 disci- ines, respectively. The Doctor of Philosophy egree is offered in 44 disciplines.

Professional masters' degrees are offered in 3 areas. Professional doctoral degrees are of- red in education and public administration.

DMISSION

equirements

raduates of any institution accredited by the oper regional accrediting association are eli- ble to apply for admission to the Graduate hool. Applicants should have ranked in the upper half of their undergraduate class and should have completed the equivalent of an undergraduate major in the field in which they propose to study. Applicants must submit with the formal application two copies of official transcripts from all colleges and universities where thirty or more quarter hours have been earned, including The University of Georgia,[1] two official copies of scores on a required entrance test, and three letters of recommendation. An application fee of $10 will be required for all new applications for admission to the Graduate School. This is a non-refundable fee and will not be credited toward the matriculation fee. Materials submitted in support of an application will not be returned.

Applications and supporting credentials must be received in the Graduate Admissions Office not later than 30 days prior to the first day of classes for the quarter the student plans to enter Graduate School. Foreign applicants must apply at least eight weeks prior to the first day of classes of the quarter they plan to enroll.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No student will be admitted without the recommendation of an academic unit. Final consideration is given by the Dean of the Graduate School.

Students may not register unless they have been notified of their acceptance to the Graduate School by the Graduate Admissions Office. All students must be admitted prior to their registration.

An applicant who does not register for regular campus courses in the quarter for which admission was granted should inform the Graduate Admissions Office of the change in plans, and request a new date of admission if one is desired.

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[1] *There is no charge for issuing transcripts of University of Georgia graduates to the Graduate Admissions Office.*

Otherwise, the original admission will be cancelled, the applicant's file will be discontinued, and a new application will be required for admission at a later date.

Entrance Tests

The Aptitude Test of the Graduate Record Examinations is an acceptable entrance test for any applicant for admission as a prospective degree candidate. Applicants for admission to masters' degree programs in education and law may offer scores on the National Teacher Examinations and the Law School Admission Test, respectively, in lieu of scores on the Aptitude Test of the Graduate Record Examinations. Scores on the Graduate Management Admission Test may be submitted in lieu of scores on the Aptitude Test of the Graduate Record Examinations by applicants seeking admission as prospective candidates for the Master of Business Administration or the Master of Accountancy degree programs. When time does not permit the applicant to submit appropriate test scores, some units will accept scores on the Miller Analogies Test for provisional admission. Applicants admitted on the basis of Miller Analogies Test scores must submit scores on an approved entrance examination before permission to register for a second quarter will be granted. Entrance test scores more than six years old are not acceptable.

The Graduate Record Examinations, the National Teacher Examinations, the Graduate Management Admission Test, and the Law School Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required, usually no later than 21 days prior to the date the examination is administered. Registration forms and detailed information on the availability and character of each examination may be obtained from the Graduate Admissions Office or by writing to the Educational Testing Service, Box 955, Princeton, New Jersey.

Foreign Students

Since several months may be required to process an application from abroad, foreign nationals are urged to submit complete application materials as early as possible. The application must include the application form, two official transcripts from all colleges and universities attended, two official copies of test scores on an approved entrance test, a $10 non-refundable application fee, and three letters of recommendation. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. Foreign applicants, for whom English is not their native tongue, must submit Test of English as a Foreign Language (TOEFL) scores in addition to scores on an approved entrance examination. The application of a student from abroad, complete with supporting materials, must be in the Graduate Admissions Office no later than eight weeks prior to the first day of classes of the quarter for which admmission is desired.

Readmission

A student who has been out of school one or more quarters, exclusive of summer, and is reapplying for the *same* degree must submit an application for "readmission" to the Graduate Admissions Office.

A student who has been out of school one or more quarters, exclusive of summer, and is applying for a *second* graduate degree, must submit an application for "admission" to the Graduate Admissions Office.

A student who has been out of school one or more quarters, exclusive of summer, and is reapplying for a degree program *different* from that for which originally admitted must submit an application for "admission" to the Graduate Admissions Office.

A currently enrolled student applying for a second graduate degree in a field different from the one in which the first degree will be awarded must submit an application for "admission" to the Graduate Admissions Office.

If a currently enrolled student is applying for a second graduate degree in the *same field* from which the first degree was awarded and does not plan to skip a quarter, exclusive of summer, the departmental graduate coordinator must write a letter to the Graduate School recommending that the student be allowed to continue for a second graduate degree.

Applications for admission or readmission must be submitted at least 30 days prior to the first day of classes of the quarter the student plans to enroll.

Change of Degree Objective

Students approved for conditional admission as unclassified postgraduate students may request a change of degree objective to that of prospective candidate for a degree after the specified conditions have been met. To accomplish this, the departmental graduate coordinator should complete the form, *Request for Change of Degree Objective*, and submit it to the Graduate School. Upon approval of the request, the Graduate School will notify in writing all persons concerned.

If a currently enrolled student wishes to change from one degree to another within the same department, e.g., M.S. in agronomy to Ph.D. in agronomy, the departmental graduate coordinator must complete the form, *Request for Change of Degree Objective*, and send it to the Graduate School. When the request is approved, the Graduate School will notify in writing all persons concerned.

A currently enrolled student desiring to change from one degree and department/ college to another degree and department/ college, e.g., M.S. in biochemistry to M.Ed. in science education, must consult the departmental graduate coordinator and the graduate coordinator of the department to which transfer is requested. If the possibility of the transfer is agreeable to both departments, the student must write a letter to the Dean of the Graduate School requesting that the change be made. The Dean will ask the graduate coordinator of the first department to send the student's file to the graduate coordinator of the second department, who in turn will send a recommendation to the Graduate School on the form, *Request for Change of Degree Objective*. When approved, the Graduate School will notify in writing all persons concerned. If the second department does not wish to accept the student, the student will be notified that he/she cannot register in the Graduate School for the following quarter until accepted by another department.

Additional Information

Correspondence concerning admission should be addressed to the Graduate Admissions Office, University of Georgia, Athens, Georgia 30602. Inquiries about facilities for advanced study and research, programs of study, and specific departmental requirements should be addressed to the department concerned.

REGISTRATION

Complete registration instructions are included in The University of Georgia Schedule of Classes for each quarter. The Schedule of Classes is available in the Registrar's Office, departmental offices, and deans' offices beginning the first week of the quarter preceding the quarter the student plans to register.

IN-SERVICE EDUCATION PROGRAM

The University provides graduate courses in a number of locations throughout the state so that students may continue their studies while at the same time continuing to carry out job-related responsibilities. Within specified limits course credit earned through this program may be included in programs of study leading to many of the professional graduate degrees offered by the University. Students planning to register for in-service courses should consult with their major professor, or if a major professor has not been appointed, with a representative of the department in which they are enrolled to ascertain if the courses in question are approved for inclusion in a program of study for a graduate degree.

GENERAL REGULATIONS

Classification of Graduate Students

Only those students who are formally admitted to the Graduate School are eligible to register for graduate courses.

Students may be admitted to the Graduate School under any one of the following classifications:

1. *Prospective candidate for a degree*. A student who meets all requirements for admission to a degree program and who has been recommended by the department in which he/she proposes to study, may be admitted as a *prospective candidate* for a graduate degree.

2. *Non-degree*. An applicant who holds a master's or a doctor's degree from an accredited institution may apply for admission as a non-degree student by submitting an application supported only by a transcript of the master's or the doctor's degree work. This classification permits individuals to enroll for graduate courses without becoming a candidate for a degree. If a non-degree student is later admitted as a prospective candidate for a degree, work taken while in this classification may be included as part of a graduate degree program subject to departmental regulations, approval of the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. Courses taken in this classification may not be included in a program of study leading to a Specialist in Education degree.

3. *Graduate Transient*. Transient admission is granted to a student in good standing in any recognized graduate school who wishes to en-

roll in the Graduate School for one quarter. The student will not be required to submit a full transcript of credits, but in order to be admitted must submit at least 30 days prior to the first day of classes of the quarter the student plans to enter Graduate School, an application and certification of graduate standing in another accredited institution. A special form for this purpose is available from the Graduate Admissions Office. Later, if the student wishes to enroll as a prospective candidate for a degree, application to the Graduate School must be made in the usual way.

4. *Unclassified Postgraduate*. A graduate of a nonaccredited college or foreign institution, or one on whom some condition has been placed by the major department, may be admitted to the Graduate School as an unclassified postgraduate. An unclassified postgraduate may later be admitted to full graduate standing on the basis of entrance test scores, his/her record at the University of Georgia, and the recommendation of the department. If an unclassified postgraduate is later admitted as a prospective candidate for a degree, work taken while in this classification may be included as part of a graduate degree program subject to departmental regulations, and approval of the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. Individuals admitted as unclassified post-graduate students will be expected to change their classification to that of prospective candidate for a degree during the second quarter of residence unless other conditions are specified on the letter of acceptance.

5. *Post-baccalaureate*. An individual who holds a baccalaureate degree and wishes to enroll in graduate in-service courses for self-improvement and/or certification purposes only may apply for admission as a post-baccalaureate student. Prospective post-baccalaureate students must submit an application for admission to the Graduate School and two copies of transcripts from each college/university from which 30 or more hours of credit has been earned. The application and transcripts should be in the Office of Graduate Admissions 30 days prior to the date of registration for the in-service course in which the student plans to enroll. No admission fee is required with a post-baccalaureate application.

Post-baccalaureate credit may be applied to a limited extent toward an advanced degree if approved by the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. Credit earned in this classification may not be applied to a program of study leading to a Specialist in Education degree.

Admission as a post-baccalaureate student does not permit registration for regular on-campus courses. If a student admitted in the post-baccalaureate classification subsequently wishes to enroll as a prospective candidate for a degree, he/she must so advise the Director of Graduate Admissions, submit appropriate test scores and recommendations, and pay the $10 admission fee.

Irregular Students

Applicants who have been denied admission to the Graduate School, if registered in the University, will be registered through the undergraduate school or college of their choice and classified as *irregular* students. No irregular student will be permitted to register for graduate courses, and no work taken while in this classification may be counted for credit toward any graduate degree.

Should the work of the irregular student prove to be of such quality as to justify admission to graduate status, reconsideration may be given to the application for admission at any time after the student has satisfactorily completed a minimum of fifteen quarter hours of approved undergraduate course work in classes on the campus and has submitted satisfactory scores on an appropriate entrance test.

Course Numbers

Courses numbered 800 and above are open only to graduate students. Certain courses devoted to fundamental knowledge carry a 400 number for undergraduates in the senior division and a corresponding 600 number for graduate students. Other courses, intended primarily for candidates for professional degrees, carry a 500 number for undergraduates in the senior division and a 700 number for graduate students.

Course Load

Any graduate student using University facilities and/or staff time, or who holds a graduate assistantship, must register for at least five quarter hours each quarter.

The course load for which a graduate student may enroll is governed by the following:

	Maximum Course Load (Qtr. Hrs.)
A student who does not have an assistantship	17
Graduate Assistants:	
One-third (1/3) time	12
Four-ninths (4/9) time	12
One-half (1/2) time	10
Two-thirds (2/3) time	6

Full-time employees of the University of Georgia	6

To exceed the maximum course load, students must obtain approval from their major professor and the Dean of the Graduate School. The department head or the departmental graduate coordinator may sign the overload request in the absence of the student's major professor.

Generally, a request to exceed the maximum course load will not be approved unless the student satisfies the following guidelines: (1) is a prospective candidate (or candidate) for a graduate degree, (2) has a cumulative graduate average of 3.5 or higher, (3) has no incompletes on his/her graduate record, and (4) is not a first-quarter student. Full-time University employees must obtain written approval for an overload from their immediate supervisor and the Dean of the Graduate School.

Application for Graduation

An application for graduation must be filed with the Registrar's Office no later than Friday of the first week of classes of the quarter in which the student plans to graduate. An application fee of $10 must be paid by students receiving masters' or specialists' degrees. Candidates for doctoral degrees must pay an application fee of $25. Application forms may be obtained from the Graduate School or the Registrar's Office. NOTE: Candidates for graduate degrees should periodically check with the Graduate School concerning dates for filing applications as these dates are subject to change.

Students must be registered the quarter in which they complete all degree requirements.

Graduation Exercises

Formal commencement exercises will be held only at the June graduation. Students who graduated in August, December, or March may participate in the June commencement exercises if they wish to do so. Candidates for degrees are urged to attend graduation exercises, but are not required to attend.

Awarding Doctoral Degrees —University Faculty

No member of the faculty of the University of Georgia, above the rank of instructor, will be awarded a doctor's degree by the University.

Extension and Correspondence

Graduate credit is not allowed for work done in extension or by correspondence.

Use of Credit

Course and resident credit used to satisfy the requirements of one degree cannot be used to satisfy the requirements of another degree.

Cumulative Graduate Average

To be eligible for graduation a student must maintain an average of 3.0 (B) on all graduate courses taken and on all courses on the program of study. No grade below C (2.0) will be accepted as part of a program of study for a graduate degree.

Reporting System

The grade scale for graduate students is as follows:

A	Excellent	90–100
B	Good	80–89
C	Satisfactory	70–79
D	Passing	60–69
F	Failure	Below 60

WF This designation indicates that the student was permitted to withdraw from a course while doing unsatisfactory work or withdrew after the mid-point of the grading period. The dropping of a course under these circumstances is equivalent to a failure. (A "W" will be assigned for withdrawals after the mid-point of the grading period in cases of hardship. A determination that a hardship exists must be made by the Office of the Dean of Students and communicated to the Graduate School.)

S This symbol indicates that credit has been given for completion of degree requirements other than academic course work. The grade of "S" must be assigned in thesis and dissertation courses (930), where student performance/progress is satisfactory. The use of this symbol is approved for seminars, "765" applied projects, "921" problems, internships, and practicums. Credit earned with an "S" grade will become part of cumulative hours earned, but the grade will not be included in the calculation of academic averages.

U This symbol indicates unsatisfactory performance/progress in an attempt to complete degree requirements other than academic course work. The grade of "U" must be assigned in thesis and dissertation courses (930), where student performance/progress is unsatisfactory. The use of this symbol has been approved for seminars, "765" applied projects, "921" problems, internships, and practicums. No credit is earned by a "U" grade. The grade is not included in the calculation of academic averages.

Once earned and recorded, a "U" grade cannot be changed to another grade. A "U" is not acceptable as a terminal grade for thesis and dissertation courses.

If a student does not receive a grade in a course for which he/she enrolled, one of the following designations must be placed on the student's record:

I This letter indicates that a student was doing satisfactory work, but for nonacademic reasons beyond his/her control, was unable to meet full requirements of the course. When an "incomplete" is not removed after three quarters of residence, the "I" automatically becomes an "F."

W This designation indicates that the student was permitted to withdraw from a course without penalty. Withdrawals without penalty will not be permitted after the mid-point of the total grading period except in cases of hardship. A determination that a hardship exists must be made by the Office of the Dean of Students and communicated to the Graduate School.

V This designation indicates an audit. No credit is given for an audit. Students may not transfer from audit to credit status or vice versa after the closing of the drop/add period of each quarter.

When a graduate course is repeated, the last grade received will be used in calculating the cumulative graduate average that is used for probation, dismissal and graduation. Grades received in all graduate courses will be included in the graduate cumulative average.

Conversion of Letter Grades to Grade Points

For purposes of computing quarterly, yearly, and cumulative grade point averages, letter grades must be converted into numerical equivalents. The equivalents are:

A	4.0	WF	0
B	3.0	I	*
C	2.0	S	*
D	1.0	U	*
F	0	V	*

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*Not computed

Probation and Dismissal

Students may be dismissed by their department at the end of any quarter if they have not made sufficient academic progress to warrant continuance of study. Termination of students will follow policies and procedures adopted by the department. When students are terminated by a department but not simultaneously by the Graduate School, they may apply for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive quarters are placed on academic probation by the Graduate School. They then must make a 3.0 or higher quarterly graduate average each succeeding quarter that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 quarterly average while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation and dismissal. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University.

Resident Credit in Graduate Centers

I. For course work leading to a professional master's degree, credit on a resident basis will be granted for graduate courses taken at a graduate center approved by the Board of Regents, provided:

1. the student has been admitted to the Graduate School of the University of Georgia prior to taking the course;
2. the physical facilities such as classrooms, library and teaching aids are adequate as determined by a site visit of at least three persons, one appointed by the dean of the school or college offering the course, one appointed by the director of libraries, and one appointed by the Dean of the Graduate School; and
3. the instructor is the same one who teaches the course on campus, or is approved by the dean of the school or college offering the course and the Dean of the Graduate School.

II. Resident credit will be granted for course work, or research, leading to degrees other than professional masters' degrees given at off-campus locations provided:

1. the student has been admitted to the Graduate School prior to taking the course;

2. the requirement of three consecutive quarters of full-time work on campus in Athens for all doctoral students is satisfied;
3. the requirement of three quarters of full-time work on campus in Athens (which need not be consecutive) is, in general, satisfied for all candidates for M.A. and M.S. degrees. An exception to the above may be made for students who prefer to spend one quarter of full-time work abroad in a program of study approved by the University of Georgia or the Board of Regents. Such study shall be counted as resident credit; and
4. the instructor is the same one who teaches the course or directs the research on campus, or is approved by the dean of the school or college offering the work and the Dean of the Graduate School.

HOUSING

Although graduate students are housed in all residence halls, Morris Hall is a graduate hall for men and Mary Lyndon for women. Located on the north campus near the College of Business Administration and the School of Law, Morris Hall houses 148 male graduate students with special law library facilities for its residents. Mary Lyndon is air-conditioned, completely carpeted, and has cable T.V. outlets in each room. Snelling Dining Hall, the School of Home Economics, the Science Center, and the College of Education are located nearby. Applications for on-campus housing will be accepted after students have been admitted to the University.

For married students, the family housing division offers a total of 545 on-campus, furnished and unfurnished one and two-bedroom apartments. Married students may apply for housing before they are admitted to the University, but assignments will not be made until they have been notified of their official acceptance. Applications and additional information may be obtained by writing Family Housing, The University of Georgia, P. O. Box 315, East Campus Road, Athens, Georgia 30602.

The Housing Office maintains an up-to-date list of housing facilities available off-campus. Communications concerning off-campus housing should be directed to the Housing Office.

EXPENSES

Residents of Georgia pay a matriculation fee of $702 per academic year of three quarters, payable $234 at the beginning of each quarter. Non-residents pay an additional amount of $317 per quarter. Any resident student who registers for less than 12 quarter hours pays $15 per hour plus a $49 activity and health fee. Any non-resident student who registers for less than 12 quarter hours pays $41 per hour plus $49 activity and health fee. Room, board, and laundry cost approximately $428 a quarter for students living in University housing. Total expenses for a resident of Georgia will be at least $2,000 per academic year. This does not include travel, clothing, and incidental expenses.

A candidate for a master's or specialist in education degree must pay a $10 graduation fee, and a candidate for a doctor's degree must pay a $25 graduation fee. The doctoral candidate must also pay a $25 microfilm fee. All fees at the University are subject to change at any time as approved by the Board of Regents.

RESIDENT/NON-RESIDENT STUDENT CLASSIFICATION

With respect to resident/non-resident student classification, University System policies provide:

1. (a) If a person is 18 years of age or older, he or she may register as a resident student only upon a showing that he or she has been a legal resident of Georgia for a period of at least 12 months immediately preceding the date of registration.
   (b) No emancipated minor or person 18 years of age or older shall be deemed to have gained or acquired in-state residence status for fee purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this State.
2. If a person is under 18 years of age, he or she may register as a resident student only upon a showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least 12 months immediately preceding the date of registration.
3. A full-time employee of the University System and his or her spouse and dependent children may register on the payment of resident fees.
4. Non-resident graduate students who hold teaching or research assistantships requiring at least one-third time service may register as students in the institution in which they are employed on payment of resident fees.

5. Full-time teachers in the public schools of Georgia and their dependent children may enroll as students in the University System institutions on the payment of resident fees, when such teachers have been legal residents of Georgia for the immediately preceding nine months, were engaged in teaching during such nine month period, and have been employed to teach full time in the public schools of Georgia during the ensuing school year.
6. All aliens shall be classified as non-resident students; provided, however, that an alien who is living in this country under a visa permitting permanent residence shall have the same privilege of qualifying for resident status for fee purposes as a citizen of the United States.
7. Foreign students who attend institutions of the University System under financial sponsorship of civic or religious groups located in this State, may be enrolled upon the payment of resident fees, provided the number of such foreign students in any one institution does not exceed the quota approved by the Board of Regents for that institution.
8. If the parents or legal guardian of a minor changes his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of 12 consecutive months on the payment of resident fees. After the expiration of the 12 month period the student may continue his/her registration only upon the payment of fees at the non-resident rate.
9. In the event that a legal resident of Georgia is appointed as guardian of a non-resident minor, such minor will not be permitted to register as a resident student until the expiration of one year from the date of court appointment and then only upon proper showing that such appointment was not made to avoid payment of the non-resident fees.
10. Military personnel stationed in Georgia and on active duty and their dependents will not be assessed the non-resident fee. This change in status will be effective Summer Quarter, 1977.

FINANCIAL ASSISTANCE AND AWARDS

General University Awards

The Graduate School each year selects graduate non-teaching assistants, and graduate research assistants from a list of applicants who are recommended by their major departments. Application blanks may be obtained from the Graduate School. Applications for these awards must be filed not later than February 15 of each year.

Graduate Non-Teaching Assistantships. These assistantships carry a stipend of $4,733 to $5,067 for a 12-month appointment, and $3,550 to $3,800 for a nine-month appointment. One-third time service is required with a maximum course work load of 12 quarter hours. Out-of-state fees are waived for non-teaching assistants who perform at least one-third time service.

Graduate Research Assistantships. These assistantships carry a stipend of $4,733 to $5,067 for a 12-month appointment and require one-third time service with a maximum course work load of 12 quarter hours. Out-of-state fees are waived for graduate research assistants who perform at least one-third time service.

Predoctoral Assistantships

Predoctoral assistantships are awarded on a competitive basis to faculty members of Georgia colleges upon nomination by the president of the college in which they are teaching. The stipend is approximately $6,324 per academic year. Predoctoral assistants enroll for full-time graduate work. Nominations should be made to the Director of the Institute of Higher Education, University of Georgia, by February 15.

Departmental Awards

A variety of fellowships and assistantships are awarded by the various departments and divisions of the University. Out-of-state graduate students who hold assistantships which require at least one-third time service are assessed fees on a resident basis.

Teaching or Research Assistantships.
These assistantships carry academic year stipends ranging from $2,500 to $5,000, depending on the qualifications of the applicant and the amount of work specified. Application should be made to the student's major department.

Alvin B. Biscoe - College of Business Administration Scholarship.
This scholarship was established in 1967 by Mrs. Alvin B. Biscoe in memory of her husband who served the University as Dean of the College of Business Administration and Vice President of Faculties. Students holding doctoral assistantships through the College of Business Administration are invited to apply for the $4,000 stipend. Application should be made to the Academic

Coordinator of Graduate Studies, College of Business Administration. Selection of recipients is made by a faculty committee.

Atlantic Steel Research Fellowship.
Three awards of approximately $500 each are made annually to M.A. and Ph.D. candidates engaged in research. Application should be made to the head of the Department of Geography.

Domestic Mining and Mineral Fuel Conservation Fellowships, Department of Health, Education, and Welfare.
The fellowships carry a stipend of $3,000 for a 12-month period and include the provision for reimbursement of tuition and fees and certain travel expenses, as well as a dependency allowance. Application should be made to the Department of Geology.

Georgia Feed and Grain Association Graduate Fellowship in Animal Nutrition.
This fellowship of $1,500 is awarded annually to a U. S. Citizen who is a graduate student in Animal Nutrition or in Animal Science, Dairy Science or Poultry Science with a major in Animal Nutrition. Funds for the award are provided by the Georgia Feed and Grain Association. This non-renewable fellowship is in addition to and independent of any other financial support.

Henry L. Richmond Graduate Scholarship.
A portion of the income from the Henry L. Richmond Fund is used to provide scholarships in the Department of Chemistry. One or more $1,000 scholarships are available each year.

John Sanford Levy Memorial Award in Marine Geology.
A fund was established in 1970 in memory of John Sanford Levy, an outstanding graduate student in marine geology, by his wife, Elizabeth, and by his parents, Dr. and Mrs. Alvin Thomas Levy. The income from this fund is used to support a graduate student in the Department of Geology in the specific area of marine sciences. In recent years the award has been $500. Application should be made to the Department of Geology.

Martin Reynolds Smith Fund.
By the gift of $2,000, Mr. J. Warren Smith has established this fund in memory of his son, Martin Reynolds Smith. The interest from this investment is to be used as prizes for excellence in research in chemistry. Applications should be directed to the head of the Department of Chemistry.

Phelps-Stokes Graduate Fellowship.
The holder of this fellowship must pursue studies in one of the following departments—sociology, economics, education, or history. He/she must make a scientific study based upon the Negro and his adjustment to American civilization. The value of this scholarship at present is $500 a year. Application should be made to the student's major department in the University.

Robert A. Sheldon Scholarship.
This award is made yearly to a student in the Department of Zoology for summer research at a field station or marine laboratory not affiliated with the University of Georgia. The stipend is $500 each year. Application should be made before January 15 to the head of the Department of Zoology.

Teresa and Robert Blumberg Scholarship.
This perpetual scholarship has been established in memory of relatives and is awarded to a student who holds a master's level assistantship in the College of Business Administration. Students should apply for the $200 supplement. Application should be made to the Academic Coordinator of Graduate Studies, College of Business Administration. Selection of recipients is made by a faculty committee.

Walter E. Heller Fellowship.
This fellowship is awarded annually to a M.B.A. candidate on the basis of high academic promise. Application should be made to the Academic Coordinator of Graduate Studies, College of Business Administration. Selection of recipients is made by a faculty committee. The $1,000 grant is made available by Walter E. Heller and Company.

O. William Gottlieb Scholarship.
This perpetual scholarship has been established in memory of relatives and is awarded to a student who holds a Master's level assistantship in the College of Business Administration. Students should apply for this $200 supplement. Application should be made to the Academic Coordinator of Graduate Studies, College of Business Administration. Selection of recipients is made by a faculty committee.

FACILITIES FOR GRADUATE RESEARCH

Oak Ridge Associated Universities

The University of Georgia is a member of Oak Ridge Associated Universities, Oak Ridge, Tennessee. Through cooperation with O.R.A.U., faculty members and graduate students may do research at Oak Ridge National Laboratory, S.R.L., P.R.C.E.E.R., and other cooperating laboratories.

When the master's or doctoral candidate has completed his/her resident work, he or she may, by special arrangement, go to Oak Ridge to do the research problem and prepare the thesis or dissertation. Such transfer of the student to the Oak Ridge National Laboratory must be initiated by the major professor and the thesis or dissertation done at Oak Ridge must be approved by the major professor.

Information on university-laboratory cooperative programs administered by Oak Ridge Associated Universities may be obtained in the Office of General Research or by writing to the University Programs Office, O.R.A.U., Box 117, Oak Ridge, Tennessee, 37830.

Members of the faculty may apply for short term research appointments in the Oak Ridge National Laboratory. These arrangements enable staff and students to keep abreast of the most modern developments in atomic and nuclear research.

Marine Facilities

As a member of the University System of Georgia, The University of Georgia has two coastal facilities available to it for research and training in the marine resources field. The Marine Institute, staffed by the University and located on Sapelo Island, represents a unique installation by virtue of its association with diverse natural marine habitats and the facilities for their study. It represents a valuable resource to the area, both in terms of direct contribution to an understanding of our environment and in implementing the training of students in the natural sciences. Facilities and partial financial support are provided by the Sapelo Island Research Foundation, a private, charitable, nonprofit organization founded by the late Mr. Richard J. Reynolds.

The resident staff of the laboratory consists of 11 scientists and a substantial number of technical and maintenance personnel. Members of the campus faculty and student body and scientists and students from other institutions are in periodic residence at the Institute. No formal academic training is now offered, although field trips by University class groups are encouraged. Research programs now in progress are in marine biology, biochemistry, marsh ecology, and plant physiology. These programs utilize the marine and estuarine habitats to which the laboratory provides access.

The Skidaway Institute of Oceanography, located on Skidaway Island, is a new unit established in 1967, and operated by the University System of Georgia. It also has resident scientists who conduct research encompassing the broad areas of environmental quality and coastal oceanography. Limited accommodations for visiting scientists and students from The University of Georgia and other institutions are being expanded.

Both institutes offer opportunities for research and training in the marine science field for selected advanced students sponsored by departments having interest in the marine resources.

Organization of Tropical Studies

The Organization for Tropical Studies (OTS), a nonprofit scientific and educational corporation, was formed in 1963 by a group of American educational institutions that have a long history of interest in developing tropical science. The member institutions—The Universidad de Costa Rica, University of California, University of Connecticut, Duke University, University of Florida, University of Georgia, Harvard University, University of Hawaii, Indiana University, University of Kansas, Louisiana State University, University of Miami, University of Michigan, Michigan State University, North Carolina State University, Smithsonian Institution, University of South Carolina, Texas Technological College, University of Washington, and University of Wisconsin—are dedicated to the purpose of developing a sound educational and research program with adequate facilities and support to provide the base support for a massive effort in solving problems in tropical science. Initial emphasis was placed on biological sciences and closely allied fields, but activities will be expanded gradually to include other fields in which study may be most effectively carried out in the tropics.

The initial objectives of the OTS are:

1. to provide a sound formal educational base in tropical biology available to all interested students and scientists in the Americas;
2. to contribute to the education of students and scientists by providing basic background and facilities for tropical research;
3. to develop an educational center that will provide fundamental insight into the principles of tropical biology;
4. to develop an educational center that will provide an intellectual resource in science for the hemisphere; and
5. to stimulate and assist programs of education and research throughout the tropics, primarily through the education of competent tropical scientists.

To implement these objectives, OTS has established an educational center for tropical studies in Costa Rica. Central headquarters are in San Jose in association with the campus of the Universidad de Costa Rica, but the entire republic serves as a classroom and laboratory. Establishment of a network of field stations in appropriate tropical habitats where classes may meet continuously from one to several weeks is an integral feature of OTS planning. OTS is committed to the concept that in order to solve the problems of tropical education and meet the goals of the organization it is necessary to maintain a continuing program of course work presented in a rigorous and organized manner. Coordinated with the course program must also be a program of research to insure maximum intellectual challenge.

Instruction is presented in a variety of disciplines. For example, the program of graduate education in tropical science includes the following courses:

Tropical Biology: An Ecological Approach
Tropical Forestry
Physical Landscape and Settlement Patterns in Selected Areas of Central America

Enrollment in OTS courses is based on national competition, with graduate students and recent postdoctoral faculty selected on the basis of academic record and interest in tropical studies. Descriptions of regularly presented courses and their prerequisites are given under listing in biology, forestry and geography.

The University of Georgia Tropical Studies Group, with about 50 members in 19 departments, sponsors seminars and workshops on the campus in support of the OTS field program. Membership is open to graduate students and faculty.

Institute of Ecology

The Institute of Ecology is a confederation of University ecologists and professionals in related fields who are interested in furthering research and graduate education. Organized in 1961, the Institute encourages and supports interdisciplinary research into ecological systems by teams of scientists. One major research center is the Savannah River Ecology Laboratory near Augusta, Georgia, operated by the Institute or the U. S. Energy Research and Development Administration, specializing in research on abandoned farmland, on reservoirs, and the application of nuclear energy to ecology. Another major interdisciplinary research project of the nstitute concerns the cycling of minerals and productivity of ecosystems at Coweeta Hydroogical Laboratory of the U.S. Forest Service in North Carolina, where watersheds under various ypes of management are being compared. Interdisciplinary groups are also engaged in investigations of marine, estuarine, hotspring, old field, and tropical communities and environments. In most or all of these projects, graduate students are conducting thesis or dissertation research.

Graduate students interested in ecology pursue the M.S. or Ph.D. degrees by enrolling in departments, schools, or colleges in which ecology training or environment-oriented programs such as botany, entomology, microbiology, zoology, forest resources, environmental design, geography, agronomy, statistics, geology, and the social sciences are offered. While the student must satisfy the special requirements of this department, relatively flexible relationships between the departments permit the faculty to provide each student with the type of training most suitable to his/her career goals. A graduate faculty associated with the Institute also has a degree program leading to a Ph.D. in ecology.

The Institute building, located on south campus, was completed in 1974 through the support of the National Science Foundation and the State of Georgia. The facility provides the major services required by faculty and students in research and training activities. Persons interested in training at Georgia may correspond with the graduate coordinator in a department, school or college or write the Ph.D. in Ecology Degree Chairman, Institute of Ecology, University of Georgia, Athens, Georgia 30602.

Institute for Behavioral Research

The Institute for Behavioral Research is a multidisciplinary research organization, the purpose of which is to encourage a pooling of the expertise of staff members and graduate students from various departments to attack significant social and behavioral problems at both basic and applied levels.

Staff members are assembled from such departments as geography, management, political science, educational psychology, psychology, and sociology. All staff members hold faculty rank in their respective departments and normally are appointed one-third time in the Institute. Most hold research grants or contracts, and research assistants are appointed to further these and other ongoing research efforts. Current Institute activities include research on such topics as Southern United States patterns of migration, effects of educational integration, cognitive determinants of attitude, and a classification of persons.

Physically the Institute is housed in the Boyd Graduate Studies Research Center, with ready access to the University Computer Center, a technical library and related facilities.

The Institute does not confer degrees; however, students interested in the Institute's activities may correspond with the graduate coordinator of any department related to the Institute or with the Director, Institute for Behavioral Research, University of Georgia, Athens, Georgia 30602.

Institute of Higher Education

The Institute of Higher Education was established in 1964 as a service and research agency of the University of Georgia. The Institute works closely with other colleges, universities, and educational agencies in promoting the overall development of higher education in the Southeast. Staff members participate in statewide and regional studies of institutional goals, professional personnel and program effectiveness. One important function is assisting smaller, developing institutions in administrative improvement, curriculum development and instructional processes. Another function is cooperating with the Graduate School in encouraging and assisting faculty members of Georgia colleges who desire to continue their graduate education and to improve their teaching skills. To examine critically conceptual and operational trends in higher education, the Institute conducts numerous seminars and conferences on various topics. Closely related to all Institute activities is a doctoral program specifically designed to study the problems and issues of higher education. Inquiries concerning Institute activities should be sent to the Director.

Libraries

The University of Georgia Libraries are composed of three major libraries on the UGA campus (Main, South Branch, and Law), plus a series of smaller collections such as the Georgia Center for Continuing Education Library, the veterinary medicine reading room and various lab collections. The UGA Libraries' system also includes libraries at the experiment stations in Griffin, Tifton, and Skidaway.

The UGA Library is the largest university library in the State of Georgia and is a member of the prestigious Association of Research Libraries, consisting of the top 100 research libraries in the U. S.

The Libraries contain over 1,600,000 books, serials and documents, and many other items including photographs, drawings, maps and artifacts. The collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

GENERAL DEGREES

MASTER OF ARTS (MA) and MASTER OF SCIENCE (MS)

Master of Arts.
The degree of Master of Arts will be conferred upon candidates who have met the requirements for this degree with major study in one of he following fields: anthropology, art history, business administration, classics, comparative literature, economics, education, English, French, geography, German, history, journalism, linguistics, mathematics, mathematics non-hesis, mathematical statistics, music, philosophy, political science, romance languages, sociology, Spanish, and speech communication.

Master of Science.
he degree of Master of Science will be confered upon candidates who have met the requirements for this degree with major study in one of he following fields: agricultural economics, agcultural engineering, agronomy, anatomy (vetrinary), animal science, biochemistry, botany, hemistry, dairy science, entomology, food science, forest resources, geology, home economics, horticulture, medical microbiology, microbiology, pharmacology (veterinary), pharmacy, physics, physiology (veterinary), plant pathology and plant genetics, poultry science, sychology, statistics, veterinary parasitology, eterinary pathology, and zoology.

equirements

1. *Admission.* A student may be admitted as a rospective candidate for the Master of Arts or Master of Science degrees upon recommendation of the major department and approval of the Dean of the Graduate School.

2. *Residence.* The minimum resident requirement is one academic year (three quarters of full-time study).

3. *Time Limit.* All requirements for the degree must be completed within six years beginning with the first registration for graduate courses on the program of study. Extension of time may be granted only for conditions beyond the control of the individual.

4. *Program of Study.* A candidate must complete a program of study which constitutes a logical whole. The courses listed in this program must carry at least 40 quarter hours of graduate credit, exclusive of thesis, and at least one-third of this credit must be in courses open only to graduate students.

The program of study must be submitted on the proper form with approval by the student's major professor, the departmental graduate coordinator, and the Dean of the Graduate School. This step should be completed during the student's second quarter of residence and must be done before the student is admitted to candidacy for a degree.

5. *Foreign Language Requirement.* Upon the option of the student's major department, a reading knowledge of a modern foreign language may be required of candidates for the Master of Arts and Master of Science degrees. (The College of Arts and Sciences requires a reading knowledge of one foreign language of students majoring in any of its departments.) The languages approved by some departments are: English, French, German, Greek, Italian, Portuguese, Russian and Spanish. The department and the major professor, however, must approve

the language proposed by the prospective candidate. Students may not elect to use their mother tongue to satisfy a reading knowledge requirement.

A reading knowledge of each language required may be established by passing a reading examination administered by the Educational Testing Services or by earning a grade of "B" or higher in a University of Georgia language reading course at the 104 level or above (equivalent to a fourth-quarter course). The ETS Foreign Language Examination may be taken a maximum of three times in any one language. (See section 8 of the statement of policies relating to the Doctor of Philosophy degree for information concerning administration of Graduate School Foreign Language Tests.)

A student whose mother tongue is not English may be permitted to use this language to satisfy a foreign language requirement. To accomplish this, the department and the major professor must recommend to the Dean of the Graduate School that English be considered as a foreign language and present evidence of the student's proficiency in the language. To be effective, this recommendation must be approved by the Dean of the Graduate School.

6. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor and graduate coordinator, and when approved by the Dean of the Graduate School. Such transfer of credit cannot exceed ten quarter hours. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate.

7. *Admission to Candidacy.* An application for admission to candidacy must be filed with the Dean of the Graduate School by the end of the first week of classes of the quarter in which the courses on the program of study are completed. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work in his/her field and that:

(1) all prerequisites set as a condition to admission have been satisfactorily completed;
(2) foreign language requirements have been met;
(3) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School; and
(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C may be placed on the program of study].

8. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

9. *Thesis.* A candidate must submit a thesis which shows independent judgment in developing a problem from primary sources. (In the Department of Mathematics, the thesis requirement may be replaced by 15 quarter hours of graduate work in 800 level courses). The thesis shall be written under the direction of the student's major professor, who may be an appointed member of the graduate faculty or a faculty member approved by the department head. The thesis must be approved by the major professor and submitted to the graduate coordinator for transmission to a reading committee. The reading committee consists of two faculty members appointed by the graduate coordinator and the major professor. The major professor may not serve on this committee.

The thesis, signed by the major professor and the chairman of the reading committee, must be submitted to the Dean of the Graduate School for his approval not later than two weeks prior to graduation.

A candidate must register for at least five quarter hours of thesis under the course number 930 and may register for as many as 50 quarter hours. Instructions for typing the thesis may be obtained in the Graduate School.

10. *Final Examination.* The candidate must pass a final oral examination covering course work and the thesis. The final oral examination is administered by the candidate's major professor, as chairman, and members of the reading committee.

11. *Binding the Thesis.* Three copies of the thesis must be deposited with the University Library for binding. Each copy must carry a certificate of approval signed by the major professor, the chairman of the reading committee, and the Dean of the Graduate School.

12. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School not later than one week prior to graduation.

DOCTOR OF PHILOSOPHY (PHD)

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activities beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in agricultural economics, agronomy, animal nutrition, animal sciences, anthropology, art, biochemistry, botany, business administration, chemistry, child and family development, comparative literature, counseling and student personnel services, ecology, economics, education of exceptional children, educational psychology, English, entomology, food science, forest resources, geography, geology, history, linguistics, mathematics, microbiology, pharmacology, pharmacy, philosophy, physics, physiology, plant pathology and plant genetics, plant sciences, political science, poultry science, psychology, reading education, Romance Languages, sociology, statistics, veterinary parasitology, veterinary pathology, and zoology.

This degree will not be granted upon the completion of any definite amount of work prescribed in advance. It will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and the passing of such written and oral examinations as may be prescribed.

Requirements

1. *Admission.* A student may be admitted as a prospective candidate for the Doctor of Philosophy degree upon certification by the major department that he/she is a person of proper attainment and promise, that appropriate courses may be adequately given, and the student's research can be adequately supported and directed. Such admission must be to an authorized field and must be approved by the Dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work must be spent in resident study on this campus.

3. *Time Limit.* All requirements for this degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the doctoral degree who fails to take the final oral examination within five years after passing the preliminary examinations, and being admitted to candidacy, will be required to take another preliminary examination and be admitted to candidacy a second time.

4. *Advisory Committee.* During the first year of residence of a prospective candidate for the Doctor of Philosophy degree, upon recommendation of the departmental graduate coordinator, the Dean of the Graduate School shall appoint an advisory committee consisting of the major professor, as chairman, and two additional members.

The advisory committee, in consultation with the student, is charged with planning the student's program of study, arranging the preliminary written and oral examinations, and approving a subject for the dissertation. The committee should advise the student of the foreign language and other requirements. The chairman and one other member of the committee must be appointed members of the graduate faculty.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the members of the department who are current members of the graduate faculty. Departments may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

5. *Program of Study.* The program of study should constitute a logical whole and must be planned by the student's advisory committee. The program of study must be submitted on the proper forms for approval by the student's major professor, the graduate coordinator, and the Dean of the Graduate School. The program of study should be submitted during the student's first year of residence.

6. *Preliminary Examining Committee.* The preliminary examining committee consists of the advisory committee plus two additional faculty members. The chairman and a majority of this committee must be appointed members of the graduate faculty. Procedures for making recommendations and appointing replacements will be the same as for the advisory committee. A form is completed and sent to the Graduate School by the graduate coordinator suggesting two faculty members in addition to the three on the advisory committee to conduct preliminary examinations. Upon approval of the Dean of the Graduate School, each member of the committee will be notified of the appointment.

7. *Preliminary Examinations.* A student must pass formal preliminary written and oral examinations before being admitted to candidacy for the degree. These examinations are adminis-

tered by the student's preliminary examining committee.

The oral preliminary examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

8. *Foreign Language Requirement.* A reading knowledge of one foreign language is required of each candidate for the Doctor of Philosophy degree. The faculty responsible for each program may require a reading knowledge of a second language or demonstration of some other special competence.

The languages approved by some departments are: English, French, German, Greek, Italian, Portuguese, Russian, and Spanish. The department and the major professor must, however, approve the language proposed by the prospective candidate. Students may not elect to use their mother tongue to satisfy a reading knowledge requirement.

The requirement of a reading knowledge of a foreign language may be satisfied by one of the following methods:

(1) Earning a grade of 3.0 (B) or higher in a University of Georgia reading course at the 104 level or above (equivalent to a fourth-quarter course).

(2) Passing a reading knowledge examination administered by the Educational Testing Service. (This examination may be taken a maximum of three times in any one language.)

(3) A student whose mother tongue is not English may be permitted to use this language to satisfy a foreign language requirement. To accomplish this, the department and the major professor must recommend to the Dean of the Graduate School that English be considered as a foreign language and must present evidence of the student's proficiency in the language. To be effective, this recommendation must be approved by the Dean of the Graduate School.

Graduate School Foreign Language Tests in French, German, Russian and Spanish are administered on campus once each quarter. Students desiring to take a GSFLT must register with and pay a fee of $15 to the Testing and Evaluation Center of the University of Georgia. Applications must be received in the Center one month before the test date. Scores on GSFLT taken elsewhere may be submitted for consideration. No other language tests are acceptable.

If a student wishes to offer a language other than French, German, Russian or Spanish, and it is acceptable to the major professor and to the department, inquiry should be made to determine if examining authorities are available on this campus. If so, the student's major professor should request approval from the Dean of the Graduate School to offer the language in lieu of one of the above. Arrangements for the examination will be made after the Dean's approval is given.

9. *Admission to Candidacy.* An application for admission to candidacy must be filed with the Dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

(1) all prerequisites set as a condition to admission have been satisfactorily completed;

(2) foreign language requirements have been met;

(3) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School;

(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C (2.0) may be placed on the program of study]; and

(5) written and oral preliminary examinations have been passed and reported to the Graduate School.

10. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

11. *Dissertation.* Candidates for the doctorate must present a dissertation on some subject connected with their major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. Its conclusions must be logical, its literary form must be acceptable, and its contribution to knowledge should merit publication.

In each department, the dissertation bears the course number 930. Students must register for a minimum of five hours of dissertation credit. They may register for a maximum of fifty hours of such credit, depending upon the amount of work required to complete their research. Instruction for typing the dissertation may be obtained in the Graduate School.

When the dissertation has been approved by the student's major professor, it must be submitted to a reading committee of three, selected by the major professor and the graduate coordinator. The chairman and one other member of the reading committee must be appointed members of the graduate faculty. The major professor may not serve on this committee. The committee will represent the graduate faculty in determing the acceptability of the dissertation and will report to the major professor if the dissertation is approved. If the reading committee declines to approve the dissertation, the major professor and the Graduate School will both be notified.

The dissertation, signed by the major professor and chairman of the reading committee, must be submitted to the Dean of the Graduate School for his approval not later than two weeks prior to graduation.

12. *Final Examination*. When the major professor has been notified that the dissertation has been approved, he/she will arrange the time and place of the final oral examination. The examination will be administered by the reading committee and one additional member selected by the major professor, with the major professor as chairman. The major professor must notify the Graduate School and the graduate coordinator of the results of this examination at least one week before the proposed date of graduation.

13. *Binding the Dissertation*. Three copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor, the chairman of the reading committee, and the Dean of the Graduate School. An original abstract of the dissertation (not more than 600 words) must be filed in the Library.

14. *Other Requirements*. Before the degree will be awarded, the student must file a copy of the abstract of the dissertation with the Graduate School. At the same time, the student must submit a receipt showing that he/she has deposited with the treasurer of the University the amount of $25 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of $15 must be paid. This must be presented to the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School not later than one week prior to graduation.

Interdisciplinary Doctoral Programs

In addition to the doctoral programs which are administered by departments in various colleges, there are two programs administered by interdepartmental committees. The program chairman, the foreign language requirement, and a brief description of each program are presented below.

1. ANIMAL NUTRITION
W. J. Miller
(Livestock-Poultry Building, South Campus)
Description of program shown under animal nutrition section under course offerings.

2. ECOLOGY
D. A. Crossley, Jr.
(Biological Sciences Building, South Campus)
Doctoral Language Requirement: the requirements of the Graduate School as specified in this bulletin.

This interdepartmental program is designed to provide students with training in modern ecology. No required core sequence is specified; students take coursework in population, community and systems ecology. Major emphasis in the program of study is on coursework related to dissertation research, but students are expected to develop a broad background in ecological science. The student is assisted by an advisory committee and is expected to produce a dissertation which is an original contribution to ecological science. Laboratories at the Institute of Ecology, the Savannah River Ecology Laboratory, and in other sections of the state (mountains, coastal plains, wetlands, lakes and rivers, coast and sea) provide unusual opportunities for ecological training.

Courses listed under a number of departments are available for the ecology degree program. (See listings for biology, botany, entomology, forest resources, geology, microbiology, statistics, and zoology.)

PROFESSIONAL DEGREES

MASTERS DEGREES

General Requirements

1. *Admission.* A student may be admitted as a prospective candidate for a professional degree upon the recommendation of the major department and approval of the Dean of the Graduate School.

2. *Residence.* The minimum residence requirement for most professional masters' degrees is three quarters, which do not have to be consecutive. See the following program descriptions for specific requirements.

3. *Time Limit.* All requirements for a professional master's degree must be completed within six years beginning with the first registration for courses on the student's program of study. Extension of time may be granted only on conditions beyond the control of the individual.

4. *Language Requirements.* All candidates for professional masters' degrees are required to show correctness and good taste in their use of both written and spoken English.

5. *Program of Study.* A program of study should be prepared by the student and the major professor during the student's second quarter in residence. This program must be submitted to the Graduate School on the appropriate forms and must be approved by the major professor, the graduate coordinator, and the Dean of the Graduate School.

6. *In-Service Credit.* A maximum of 30 hours of graduate in-service course credit may be included in certain programs. Students are responsible for contacting the department in which they are enrolled to ascertain if in-service courses are acceptable on their program of study. (See the following statement concerning a limitation on in-service credit.)

7. *Accepting Credit by Transfer.* If graduate work taken at an accredited institution constitutes a logical part of a student's program, transfer of credit may be allowed if recommended by the student's major professor and graduate coordinator, and approved by the Dean of the Graduate School. Such transfer of credit cannot exceed 10 quarter hours and cannot reduce residence requirements. No grade below B may be transferred. The courses to be transferred may not have been used as part of the requirement for another degree. Transfer grades are not used in calculating quarterly and cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the date the student plans to graduate. A combination of in-service and transfer credit may not exceed 30 quarter hours on any program of study.

8. *Admission to Candidacy.* An application for admission to candidacy must be filed with the Dean of the Graduate School by the end of the first week of classes of the quarter in which the courses on the program of study are to be completed. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work and that normal progress has been made toward earning a degree. The student's major professor and graduate coordinator must certify that the following specific requirements for admission to candidacy have been met:

(1) all prerequisites set as a condition to admission have been completed;
(2) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School;
(3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C may be placed on the program of study].

9. *Thesis.* If a thesis is required for a professional master's degree, inquiry should be made to the appropriate department concerning procedures to be followed.

10. *Grade Average*. To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

11. *Final Examination*. The candidate must pass a final examination administered by the department. If an oral examination is given, it must be administered by a committee of no less than three faculty members. The results of this examination must be reported to the Graduate School by the major professor.

12. *Final Clearance*. All requirements for the degree must be completed and reported to the Graduate School not later than one week prior to graduation.

PROGRAM DESCRIPTIONS

Master of Accountancy (MAcc)

This degree is designed to prepare students for professional careers in public or governmental accounting or for executive positions in private accounting. It is open to students who hold a Bachelor of Business Administration degree or its equivalent, with at least thirty quarter hours in accounting, including accounting principles. Candidates must complete an approved program of 55 graduate quarter hours, including 30 hours in accounting, 15 hours in general business and economics (to be chosen from the core courses in the Master of Business Administration program), and 10 hours of electives. At least 45 hours must be in courses open only to graduate students.

Master of Accountancy (emphasis on taxation)

This option is designed for the student who desires specialized training in taxation beyond the bachelor's degree, as preparation for a career in public accounting, private accounting, or government. Twenty of the thirty hours in accounting required for the Master of Accountancy degree must be in the area of taxation.

Master of Agricultural Extension (MAExt)

This degree is designed especially for cooperative extension workers. In addition to general Graduate School requirements, a baccalaureate degree appropriate to one's work and one year of field experience in cooperative extension, or its equivalent, is required before a prospective candidate may begin the program. Candidates must complete an approved program of 55 quarter hours of graduate work.

Master of Art Education (MAEd)

An approved baccalaureate degree is the prerequisite for this program. The minimum requirement for this degree is an approved program of 50 quarter hours of graduate work in art, education, and art education combined, plus EAR 765, *Applied Project in Art Education*. A minimum of four quarters of resident study is required.

Master of Arts for Teachers (MAT)

The Master of Arts for Teachers program is designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, history, Romance Languages, and Spanish. There is no thesis or language requirement.

In general, admission requirements for programs leading to the Master of Arts for Teachers degree are the same as admission requirements for programs leading to the Master of Arts degree. Applicants should contact the department in which they plan to enroll for information concerning admission to specific programs. In addition to departmental admission requirements, all applicants for the MAT program must hold a baccalaureate degree from an accredited college or university, with an undergraduate major of at least 35 quarter hours in the appropriate field of study and be able to satisfy all requirements for the professional fourth-year teaching certificate issued by the State of Georgia for the subject area in which they plan to major. Individuals who cannot satisfy the certification requirement, but meet all other admission criteria, may be admitted as unclassified postgraduate students.

Each student will be required to meet the following program requirements before being granted the MAT degree:

(1) complete 40 quarter hours of graduate course work in the subject area, with approval of the student's academic department;
(2) complete 15 quarter hours of graduate course work in education and related fields, with approval of the appropriate department in the College of Education;
(3) pass a final comprehensive examination covering course work and a reading list; and
(4) receive training in methods of research in the appropriate subject field.

Master of Avian Medicine (MAM)

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment and prevention of poultry diseases. The degree is open to students who hold the Doctor of Veterinary Medicine degree.

Candidates for this degree must complete for credit an approved program of 55 quarter hours of graduate work, including 38 hours from a series of core courses and 17 hours from a selected group of electives. The program must include "Problems in Poultry Diseases and Parasites" (AM 811), in which an acceptable written report must be presented. No thesis or foreign language is required.

Master of Business Administration (MBA)

This program is designed for the student who desires sound training beyond the bachelor's degree, as preparation for a career in business. Candidates for this degree must complete for credit an approved program of 55 quarter hours of graduate work, including the following: Management Sciences 900; Accounting 855; Management 900; Finance 800; Economics 900; Marketing 960; and Management 953. Fifty quarter hours must be in the fields of business administration and economics. The remaining five hours may be taken in another department of the University, subject to the approval of the graduate coordinator.

Any approved baccalaureate degree may be accepted as the prerequisite for the program. Students who hold the equivalent of the Bachelor of Business Administration degree will be able to complete the program in four quarters of full-time study. Others, depending on the extent of their collegiate background in economics and business administration, may be required to complete as much as 28 hours of foundation work in business or economics.

Master of Education (MEd)

This degree is designed for the student whose vocational objectives require preparation for teaching, supervision, counseling, and/or first line administration in grades K-12, junior colleges, and other educational and/or helping agencies. Students who contemplate becoming candidates for this degree should seek the advice of the Director of Graduate Studies in the College of Education as to the program to be followed. This degree may be attained through either of the two following programs of work:

PLAN A.

The requirements for the degree of Master of Education may be met by the completion of an approved program of 11 graduate courses (55 quarter hours). Under this plan, the following two courses must be included in the student's program: a research course and ERS 765, *Applied Project in Education*.

PLAN B.

Under this option, the requirements for the Master of Education degree may be met by 60 quarter hours of approved graduate course work. A research course must be included in the student's program.

Master of Fine Arts (MFA)

The requirements for this degree are satisfactory completion of an approved program of 50 quarter hours of graduate course work and a creative project or problem to be designated as 921, which will carry five hours credit.

In *music*, the problem may be satisfied by a large original composition, a solo recital which indicates graduate quality, or by an approved research project.

In *art*, emphasis will be placed upon a high degree of technical and artistic accomplishment. The student must also have a general knowledge of art history and criticism.

In *drama*, emphasis will be placed not only upon a high degree of technical and artistic accomplishment but also on a general knowledge of relevant history and literature.

The prerequisite for a program in art, drama or music is the Bachelor of Fine Arts, or its equivalent.

Master of Forest Resources (MFR)

A professional program designed to be a terminal degree program for forest resource managers, the Master of Forest Resources presumes a Bachelor of Science in Forest Resources degree or the equivalent. The minimum requirement for the degree of Master of Forest Resources is an approved program carrying 55 quarter hours of graduate credit. Twenty hours must be in forest resources and so selected as to form a logical major. Twenty hours of additional credit must be earned in forest resources or a closely related field. The remaining fifteen hours must be taken outside the field of forest resources. No thesis is required.

Master of Home Economics (MHE)

The Bachelor of Science in Home Economics, or equivalent degree, is the prerequisite for this program. The minimum requirement for the degree of Master of Home Economics is an approved program of 11 graduate courses (55 quarter hours) with three quarters of resident study. At least four courses must be taken in a selected field in home economics. These must include Home Economics 921 (five hours), *Problems in Home Economics*, on which an acceptable written report must be presented. In the departments of clothing and textiles, foods and nutrition, and housing, furnishings and home management at least two courses in the student's program must be from fields other than home economics.

Master of Landscape Architecture (MLA)

The Bachelor of Landscape Architecture or Bachelor of Architecture, or equivalent degree, is the prerequisite for this program. The requirement for this degree is an approved program of at least 50 quarter hours of graduate course work and an acceptable thesis. Candidates enrolled in the Georgia Institute of Technology-University of Georgia joint program in city planning and landscape architecture will require an approved program of at least 40 quarter hours of course work and an acceptable thesis.

Master of Laws (LL.M)

The Master of Laws program is designed for those students who seek an opportunity for a more thorough study of certain areas of the law than is possible within the limitations of the three-year *Juris Doctor* (J.D.) program. The graduate law program combines intensive supervised work in a single subject with an opportunity to take courses in related fields.

A minimum of three quarters graduate study in residence is required, with a total of 40 quarter hours of graduate credit.

A thesis must be completed which will carry a maximum of 10 quarter hours of the total hours required. The student also may take a maximum of five quarter hours in a special problems course.

A student who wishes to pursue the Master of Laws degree must hold an A.B. degree or equivalent from an approved college and a J.D. degree or equivalent from a law school which is a member of the Association of American Law Schools or is approved by the American Bar Association. In addition, the student's undergraduate record must display high scholarly aptitude, and the qualities of maturity and seriousness of purpose to justify the expectation that the applicant will satisfactorily complete the requirements for the degree.

Graduate students from non-English speaking countries must hold a degree from a recognized law school in a foreign country, with an academic record acceptable to this faculty and possess proficiency in English as demonstrated on the Test of English as a Foreign Language (TOEFL).

For additional information, write the School of Law for a copy of the Law School Bulletin.

Master of Music Education (MMEd)

This degree may be obtained through either of two plans. Under either plan (A or B), a minimum of three quarters in residence is required and a general musicianship examination must be passed during the final quarter of work.

PLAN A.

The requirements for this degree may be met by completion of an approved program of study of 50 graduate hours in music, education and music education, plus five quarter hours in applied problems in music. This program must include at least 40 quarter hours outside the field of education. A research course must be included in the student's program.

PLAN B.

Under this option, the requirements may be met by completion of an approved program of 60 quarter hours of graduate course work. These courses must include at least 40 quarter hours outside the field of education. A research course must be included in the student's program.

Master of Plant Protection and Pest Management (MPPPM)

The Master of Plant Protection and Pest Management program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, and regulatory agencies.

Applicants for the Master of Plant Protection and Pest Management program must hold the baccalaureate degree from an accredited college or university. Basic admission requirements are essentially the same as those required for admission to Master of Science programs in each of the four university divisions cooperating to offer the program. Students who satisfy all basic admission requirements, but whose background in pertinent biological and agricultural sciences is inadequate, must enroll for selected undergraduate courses as a means of removing deficiencies. Inquiries concerning specific admission requirements and procedures should be addressed to: Coordinator of M.P.P.P.M. Program, Department of Plant Pathology and Plant Genetics, Plant Sciences Building, University of Georgia, Athens, Georgia 30602.

A total of 62 quarter hours of graduate course work will be required to complete the program. Students will complete two internships. The first will come near the mid-point of the program, and the second will be the final course requirement. There is no thesis or language requirement. Each candidate for the degree must pass final written and oral examinations.

Master of Public Administration (MPA)

A baccalaureate degree is the prerequisite for this program. The program requires 60 quarter hours of graduate course work in government, business administration and other specialities, including the computer sciences. A six-month internship in an agency of local, state or federal government also is normally required.

Master of Social Work (MSW)

A program of the School of Social Work, this graduate professional degree is awarded after successful completion of at least five academic quarters. The course work is divided between both on-campus and field instruction. A research project, Social Work 921, is required of all candidates. The program of study requires a minimum of 60 quarter hours of graduate credit.

In addition to meeting the general admission requirements of the Graduate School, students in the School of Social Work must demonstrate sufficient maturity, self-awareness, objectivity, and interpersonal competence. An admission interview with on-campus or field faculty is a desired pre-admission procedure.

SPECIALIST IN EDUCATION (EdS)

The Specialist in Education degree is a self-contained degree program intermediate between the master's degree and the doctor's degree both in time and depth. It provides advanced study for those preparing for positions which call for a higher level of competence and specialization than that of the master's degree, but without the heavy emphasis on research of the doctor's degree.

Requirements

1. *Admission.* A student may be admitted as a prospective candidate for the Specialist in Education degree upon recommendation of the major department and approval of the Director of Graduate Studies, College of Education, and the Dean of the Graduate School.

2. *Time Limit.* All requirements for the Specialist in Education degree must be completed within six years, beginning with the first registration for courses on the student's program of study. Extension of time may be granted only on conditions beyond the control of the individual.

3. *Program of Study.* A program of study should be prepared by the student and the major professor during the first quarter in residence. The program for the degree shall consist of a minimum of 45 quarter hours of study at the graduate level beyond the master's degree. The program shall be planned as a logically organized whole, in light of the student's record in previous undergraduate and graduate courses, performance on standardized and non-standardized examinations, and the entire professional experience. The program of study, approved by the major professor and the Director of Graduate Studies, is submitted to the Graduate School when the student applies for admission to candidacy. For course work taken after January 1, 1977, to be eligible for inclusion in a program of study it must have been taken after the student was admitted as a prospective candidate for the Specialist in Education degree.

4. *Language Requirement.* All candidates for graduate degrees are required to show correctness and good taste in their use of both written and spoken English.

5. *Accepting Credit by Transfer.* If graduate work earned at an accredited institution constitutes a logical part of the student's program, transfer credit may be allowed if recommended by the student's major professor, the Director of Graduate Studies, and approved by the Dean of the Graduate School. Such transfer of credit cannot exceed ten quarter hours and cannot reduce the residence requirements to less than 25 hours. The courses to be transferred may not have been used as part of the requirements for another degree. No grade below B (3.0) may be transferred. All requests for transfer credit, with accompanying official transcript, must be in the Graduate School at least 30 days prior to the time the student plans to graduate.

6. *In-Service Credit.* A maximum of 20 hours of graduate in-service credit may be included in a program of study for the degree. This maximum will be reduced by any credit transferred from another institution.

7. *Admission to Candidacy.* An application for admission to candidacy must be filed with the Director of Graduate Studies of the College of Education on the completion of four or five courses. This application is a certification by the student's major department that the student has

demonstrated the ability to do acceptable graduate work in the chosen field and that the student has made normal progress toward the degree. The specific requirements for admission to candidacy are listed below:

(1) all prerequisites set as a condition to admission have been completed;
(2) the program of study has been approved by the major professor, the Director of Graduate Studies, and the Dean of the Graduate School;
(3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C may be placed on the program of study]; and
(4) the scores on the Common and Option Examinations of the National Teacher Examinations, or the scores on the Aptitude Tests of the Graduate Record Examinations are satisfactory.

8. *Grade Average*. To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

9. *Final Clearance*. All requirements for the degree must be completed and reported to the Graduate School not later than one week prior to graduation.

DOCTOR OF EDUCATION (EdD)

This degree provides advanced professional training for careers in teaching, administration, and other educational services. The degree is offered in the following fields of education: adult education, art education, business education, counseling and student personnel services, curriculum and instruction, early childhood education, education of exceptional children, education of gifted, educational administration, educational measurements, educational philosophy, educational psychology, elementary education, geographic education, higher education, language education, mathematics education, music education, physical education, reading education, recreation, research design, school psychology, science education, social science education, sociology education, speech pathology, supervision, teacher education, and vocational education. Specialization in research training and in subject fields appropriate to elementary, secondary, and college teaching is provided.

Requirements

1. *Admission*. Students who desire to pursue advanced professional training in education beyond the master's degree, with a view to becoming candidates for the Doctor of Education degree, will be expected to file formal application and present themselves to the faculty of the College of Education for special tests and interviews. Recommendation on the student's admission will be made by the College of Education only after its screening procedures have been carried out. Admission will be upon the recommendation of the Dean of the College of Education, or his authorized representative, and approval of the Dean of the Graduate School.

2. *Residence*. The degree presupposes a minimum of three full years of study beyond the bachelors degree and it cannot be secured through summer work alone. At least three consecutive quarters must be spent in full-time residence study on the campus of The University of Georgia. This requirement may be satisfied during any three consecutive quarters of graduate work. Course and resident credit used to satisfy the requirement for another degree cannot be used to satisfy the requirements for this degree.

3. *Time Limit*. All requirements for the degree except the dissertation and final oral examination must be completed within a period of six years. This requirement begins with the first registration for graduate courses on the student's program of study.

A candidate for a doctoral degree who fails to take the final oral examination within five years after passing the preliminary examinations and being admitted to candidacy will be required to take another preliminary examination and be admitted to candidacy a second time.

4. *Advisory Committee*. When a student has been admitted as a prospective candidate for the Doctor of Education degree, the Dean of the Graduate School will appoint three persons recommended by the Director of Graduate Studies of the College of Education to serve as an advisory committee, with the student's major professor serving as chairman of the committee.

The advisory committee in consultation with the student is charged with planning the student's program of study, arranging the preliminary written and oral examinations, and approving a subject for the dissertation. The chairman and one other member of this committee must be appointed members of the graduate faculty.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the faculty members in the department who are current members of the graduate faculty. Departments may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

5. *Program of Study*. The program of study should be submitted during the first year of work as a prospective candidate for the degree. It must provide a major concentration in the field of education and a minor concentration in courses outside the field of education and significantly related to the student's vocational objectives.

6. *Preliminary Examining Committee*. The preliminary examining committee consists of the advisory committee plus two additional faculty members. The chairman and a majority of this committee must be appointed members of the graduate faculty.

Recommendations and replacements will be the same as for the advisory committee. A form is completed and sent to the Dean of the Graduate School by the Director of Graduate Studies suggesting two faculty members in addition to the three on the advisory committee to conduct the examinations. Upon approval of the Dean of the Graduate School, each member of the committee will be notified of the appointment.

7. *Preliminary Examinations*. Students must pass formal preliminary written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's preliminary examining committee.

The oral preliminary examination is open to all members of the faculty and shall be announced by the Graduate School. The major professor and the Director of Graduate Studies must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

8. *Admission to Candidacy*. Before students may become candidates for the Doctor of Education degree, they must have at least two years of successful experience in teaching or a closely-related field of work, have had a broad background of training, and must have demonstrated to the faculty of the College of Education those personal qualities that are considered by it to be essential to success in the field of teaching. These conditions having been met, the student may be admitted to candidacy when:

(1) all prerequisites set as a condition to admission have been completed;
(2) the candidate has demonstrated such competency in the methodology of educational research and such proficiency in the use of language as the advisory committee requires;
(3) the program of study and proposed research for the dissertation has been approved by the major professor, the Director of Graduate Studies, and the Dean of the Graduate School;
(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C(2.0) is acceptable on the program of study]; and
(5) written and oral preliminary examinations have been passed and reported to the Graduate School.

An application for admission to candidacy must be filed with the Dean of the Graduate School for his approval at least three quarters prior to graduation.

9. *Grade Average*. To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

10. *Dissertation*. The dissertation is the most important single requirement for the Doctor of Education degree. It should demonstrate the intelligent application of research techniques to the solution of a problem in educational practice. The problem chosen must be definite and appropriately limited in scope, the method of investigation must be exact, the source materials must be intelligently evaluated, and the conclusions must be well supported. It is expected that the pursuit of this study will involve not less than one full year of work—frequently, much more. The finished dissertation must show correctness and good taste in the use of English.

The dissertation bears the course number 930. Students must register for a minimum of five hours of dissertation. They may register for a maximum of fifty hours of such credit, depending upon the amount of work required to complete their research. Instructions for typing and preparing the dissertation may be obtained in the Graduate School.

When the dissertation has been approved by the student's major professor, it must be submitted to a reading committee of three selected by the major professor and the Director of Graduate Studies. The major professor may not serve on this committee. The chairman and at least one other member of the reading committee must be from the graduate faculty. The committee will represent the graduate faculty in determining the acceptability of the dissertation and will report to the major professor if the dissertation is approved. If the reading committee declines to approve the dissertation, the major professor and Graduate School will both be notified.

The dissertation, signed by the major professor and the chairman of the reading committee, must be submitted to the Dean of the Graduate

School for his approval not later than two weeks rior to graduation.

11. *Final Examination*. When the major profes- or has been notified that the dissertation has een approved, he/she will arrange the time and lace of the final oral examination. The examina- ion will be administered by the reading commit- ee, one additional member selected by the najor professor, with the major professor as hairman. The major professor must notify the Graduate School of the results of this examina- ion at least one week before the proposed date f graduation.

12. *Binding of Dissertation*. Three official opies of the dissertation must be filed with the niversity Library for binding. The student may ave additional copies bound. Each copy must arry a certificate of approval signed by the najor professor, the chairman of the reading ommittee, and the Dean of the Graduate chool. An original abstract (not more than 600 ords) must also be filed with the Library.

13. *Other Requirements*. Before the degree ill be awarded, the student must file one copy f an abstract of the dissertation with the raduate School. At the same time, the student ust submit a receipt showing that he/she has eposited with the treasurer of the University the mount of $25 to cover the cost of microfilming e dissertation. If the student desires to have e dissertation copyrighted, an additional harge of $15 must be paid. This must be pre- ented to the University Library in the form of a ertified check or money order made payable to niversity Microfilms.

All requirements for the degree must be com- eted and reported to the Graduate School not ter than one week prior to graduation.

OCTOR OF PUBLIC DMINISTRATION (DPA)

e objective of the program is to provide doc- ral level training for several client groups. First, e program will prepare students to serve in ecutive or upper managerial levels in local, ate, and federal jurisdictions. Second, the pro- am will prepare students for a variety of institu- nal settings that have significant interfaces th public agencies. These include various in- tutes, private planning agencies, and consult- organizations. Third, the program will help epare individuals for specialized research and ching careers.

Requirements

1. *Admission*. Students may be admitted as prospective candidates for the Doctor of Public Administration degree upon certification by their major department that they are persons of proper attainment and promise and that the appropriate courses can be adequately given and required research adequately supported and directed. Such admission must be approved by the Dean of the Graduate School.

2. *Residence*. The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work must be spent in resident study on this campus. If the student holds an assistantship or has other part-time duties, the residence requirements will be increased to provide the equivalent of three consecutive quarters of full-time study in residence.

3. *Time Limit*. All requirements for the degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on the program of study.

A candidate for the Doctor of Public Administration degree who fails to take the final oral examinations within five years after passing the preliminary examinations and being admitted to candidacy will be required to take another preliminary examination and be admitted to candidacy a second time.

4. *Advisory Committee*. During the first year of residence of a prospective candidate for the Doctor of Public Administration degree, upon recommendation of the candidate's graduate coordinator, the Dean of the Graduate School shall appoint a committee consisting of the major professor as chairman and two additional members to act as an advisory committee.

The advisory committee, in consultation with the student, is charged with planning the student's program of study, arranging preliminary written and oral examinations, and approving a subject for the dissertation. The chairman and one other member of this committee must be appointed members of the graduate faculty.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the members of the department who are current members of the graduate faculty. The department may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

5. *Program of Study*. The program of study should constitute a logical whole and must be

planned by the student's advisory committee. The program of study must be submitted on proper forms with approval by the student's major professor, the graduate coordinator, and the Dean of the Graduate School.

6. *Preliminary Examining Committee*. The preliminary examining committee consists of the advisory committee plus two additional faculty members. The chairman and a majority of this committee must be appointed members of the graduate faculty. Recommendations and replacements will be the same as for the advisory committee. A form is completed and sent to the Graduate School by the graduate coordinator suggesting two faculty members in addition to the three on the advisory committee to conduct preliminary examinations. Upon approval of the Dean of the Graduate School, each member of the committee will be notified of the appointment.

7. *Preliminary Examinations*. Students must pass formal preliminary written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's preliminary examining committee.

The oral preliminary examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

8. *Admission to Candidacy*. An application for admission to candidacy must be filed with the Dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work in his/her field and that:

(1) all prerequisites set as a condition to admission have been completed;
(2) the program of study has been approved by the major professor, the graduate coordinator, and the Dean of the Graduate School;
(3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [*no course with a grade below C (2.0) may be included on the program of study*]; and
(4) written and oral preliminary examinations have been passed and reported to the Graduate School.

9. *Grade Average*. To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

10. *Dissertation*. Each candidate for the doctorate must present a dissertation on some subject connected with his/her major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of the subject. Its conclusions must be logical, its literary form must be acceptable, and its contribution to knowledge should merit publication.

In each department the dissertation bears the course number 930. Students must register for a minimum of five hours of dissertation credit. They may register for a maximum of fifty hours of such credit depending upon the amount of work required to complete their research. Instructions for typing and preparing the dissertation may be obtained in the Graduate School.

When the dissertation has been approved by the student's major professor, it must be submitted to a reading committee of three selected by the major professor and the coordinator of graduate studies for the program. The major professor may not serve on this committee. The chairman and at least one other member of the reading committee must be appointed members of the graduate faculty. The committee will represent the graduate faculty in determining the acceptability of the dissertation and will report to the major professor if the dissertation is approved. If the reading committee declines to approve the dissertation, the major professor and the Graduate School will both be notified.

The dissertation, signed by the major professor and the chairman of the reading committee, must be submitted to the Dean of the Graduate School for his approval not later than two weeks prior to graduation.

11. *Final Examination*. When the major professor has been notified that the dissertation has been approved, he/she will arrange the time and place of the final oral examination, which will be administered by the reading committee, one additional member selected by the major professor, with the major professor serving as chairman. The major professor must notify the Graduate School of the results of this examination at least one week before the proposed date of graduation.

12. *Binding the Dissertation*. Three official copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor, the chairman of the reading committee, and the Dean of the Graduate School. An original abstract of the dissertation (not more than 600 words) must also be filed with the Library.

13. *Other Requirements*. Before the degree will be awarded, the student must file with the Graduate School a copy of the abstract of the dissertation. At the same time, the student must

submit a receipt showing that he/she has deposited with the treasurer of the University the amount of $25 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of $15 must be paid. This must be presented to the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School not later than one week prior to graduation.

PROGRAM FOR TEACHER CERTIFICATION

The University of Georgia offers graduate programs leading to teacher certification at the masters, specialist, and doctoral levels in some 40 different teaching, administrative, supervisory and school service fields.

The degrees Master of Education, Master of Arts (Education), and Master of Arts for Teachers include both teaching and professional courses for fifth-year certification. Students who complete a Master of Arts degree may meet certification requirements by taking professional courses in education.

Detailed information concerning programs and procedures relating to graduate teacher certification may be obtained from the Director of Graduate Studies, College of Education.

CERTIFICATE IN GERONTOLOGY

The University awards a Certificate in Gerontology to graduate students meeting certain requirements. These include the completion of at least 25 quarter hours of coursework in aging along with an approved thesis, research activity or field placement. All candidates are required to take GNT 600, a five-hour interdisciplinary Seminar in Aging. Other courses may be chosen by the student according to his/her individual interests or career objectives, with the provision that a total of at least 15 hours of coursework be in courses directly related to gerontology and the remaining hours from designated courses having components related to the field of aging. To assure the interdisciplinary nature of the program, students may apply no more than 10 quarter hours of credit toward certification requirements in any one academic department.

Work on the Certificate in Gerontology may be undertaken by any graduate student at the University. Courses that may be applied toward the Certificate are found in the following academic units: Adult Education, Counseling Education, Foods and Nutrition, Home Economics Education, Housing and Home Management, Management, Music, Pharmacy, Psychology, Recreation Education, Social Work, and Sociology.

To be admitted to the certification program, the student must be admitted to a department of the University at the graduate level—either as a prospective candidate for a graduate degree or as a non-degree candidate—and then make application to the chairman of the Faculty of Gerontology. The non-degree candidate status applies to the person who meets requirements for admission to the Graduate School, but who wishes to take graduate courses without becoming a candidate for a degree. The prospective recipient of the Certificate in Gerontology should be admitted to a department of the University and be assigned an advisor. The student and his/her advisor can then plan the program of study that will be a part of the student's application for acceptance into the gerontology program.

For further information, application forms, and a list of courses that may be applied toward requirements for the Certificate in Gerontology, please contact: Dr. James E. Montgomery, Chairman, Faculty of Gerontology, 215 Dawson Hall, University of Georgia, Athens, Georgia 30602.

COURSE OFFERINGS

All courses carry five quarter hours credit unless otherwise stated. No student will be permitted to register for more than 17 hours credit per quarter without special approval by the Dean of the Graduate School.

In each department the thesis or dissertation bears the number 930. A degree candidate must register for at least five quarter hours of thesis, and may register for as many as 50 quarter hours, depending upon the work required to complete his/her research.

A few courses are offered in more than one department. Descriptions for these courses are listed under the first prefix abbreviation given.

Some professional degree programs require a problem. This course will carry the number 921 with the departmental designation. (In education the number is 765.) The course will carry a maximum of five hours for all professional degrees.

The courses offered each quarter are listed in the Timetable of Classes. This publication may be obtained from the Registrar's Office, the departmental offices, and deans' offices beginning the first week of the quarter preceding the quarter the student plans to register.

AGRICULTURAL ECONOMICS (AEC)

S. J. Brannen
(Conner Hall)

Graduate study in agricultural economics leading to the M.S. and Ph.D. degrees provides a wide range of formal courses. Thesis research may be undertaken in any one of the following fields of specialization: (1) agricultural business management; (2) production economics; (3) farm management; (4) agricultural policy; (5) land and water economics; (6) agricultural finance; (7) agricultural prices; (8) agricultural cooperatives; (9) economic development; (10) agricultural marketing; and (11) environmental economics.

Thesis research is coordinated with the department's overall research program. Students may select a thesis topic related to the department's current research projects in the Agricultural Experiment Stations or in general research. n addition to Experiment Station facilities available for research, the farms and related business irms of Georgia serve as laboratories for economic analyses. A remote communications erminal facilitates use of the University Computer Center in departmental research.

Financial assistance is available for deserving graduate students. Most of this financial assisance is in the form of departmental research assistantships. In addition, the student may apply for both non-teaching and research assisantships offered through the Graduate School.

00. Cooperative Business Organizations. Thompson)
Prerequisite: AEC 300 or equivalent.
Economic nature of a cooperative; advantages f pooling business volume; appraising coperative performance; cooperative, economic nd business management principles.

01. Rural Organizations. (Frazier)
rerequisite: AEC 300, POL 101, and two senior division courses in economics or agricultural economics.
History of agricultural organizations; study of selected rural agencies and organizations; and a study of the relationship between organizations of rural people and their economic well-being.

602. Advanced Farm Organization and Management. (Wise)
Prerequisite: AEC 301 or consent of instructor.
Application of economic principles and techniques to individual farm plans and formulation of economic models which postulate optimum allocation of land, labor and capital as guides for decision making.

603. Marketing Livestock and Livestock Products. (Frazier)
Prerequisite: AEC 300, two animal science courses, two senior division courses in economics or agricultural economics, or consent of instructor.
An economic study of livestock marketing with emphasis on functions of marketing, prices, regulations, and the institutions that implement the marketing of livestock.

608. Economics of Agricultural Labor Utilization. (Thompson)
Prerequisite: AEC 300 or equivalent.
Principles and techniques of work efficiency; finding, evaluating and putting into use better work methods; includes work simplification, time study and budget analysis, worker training and motivation, crew organization and management.

621. Agricultural Adjustments and Resource Development. (Saunders)
Prerequisite: AEC 300 or equivalent and two senior division courses in agricultural economics or economics.
The application of fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

651. Farm Appraisal. (Wise)
Prerequisite: AEC 300 or consent of instructor.
An application of the methods of appraisal to farm property. A study of the factors influencing farm land and building values, relationship of land use, soils, crops, livestock, buildings, and other factors to farm value.

658. Intermediate Economics Principles.
Prerequisite: AEC 458 or equivalent and graduate standing.
The principles of competitive and imperfect markets in the allocation of consumer goods and input factors in the free enterprise economy.

660. Economics of Rural Environmental Quality. (Broder)
Prerequisite: AEC 300 or consent of instructor.
An appraisal of efficiency and equity impacts of rural environmental problem solutions in existing social, economic and political structures. An analysis of general concepts and techniques for the evaluation of alternative pollution abatement policies in relation to changing social, economic and political structures.

661. Quantitive Techniques in Agricultural Economics.
Prerequisite: AEC 458 or equivalent.
Application of basic quantitive techniques in agricultural economics theory and analysis. Emphasis on basic models used in the study of prices, marketing and production.

667. Agricultural Prices. (Thompson; Miller)
Prerequisite: AEC 300 or equivalent.
The integrated use of price theory and statistical techniques to analyze the behavior of prices, with special emphasis on the prices of agricultural commodities.

669. Agricultural Finance. (Musser)
Prerequisite: AEC 300 and 302 and ACC 110 or equivalent and/or consent of instructor.
The financial management of agricultural businesses including financial statements, forecasting, and budgets. Emphasis on capital budgeting, cost of capital, and working capital management.

671. Resource Analysis of Agricultural Businessee. (Brown)
Prerequisite: AEC 304 and 300 or equivalent and consent of instructor.
The relationship of inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

680. Water Resource Economics.
Prerequisite: AEC 300 or equivalent.
A study of the economic aspects of the use, supply, development and management of water resources with special emphasis on river basin and project planning, benefit-cost analyses, water demands and multiple-use management of water resources.

687. (FIN, MKT) Commodity Marketing. (Williams)
Prerequisite: Consent of instructor.
Development, functions, and importance of commodity markets, principles and mechanics of trading commodities on future markets. Includes study of speculation, hedging, and roles of commission houses, commodity exchanges, clearing houses. Analysis of technical and fundamental trading theories and use of future contracts as instruments for financing business activities.

702. Manageent in Agriculture. (Thorne)
Prerequisite: AEC 301 and 300 or equivalent.
The study of relevent economic principles; identification and measurements for decision criteria; analysis of managerial alternatives in agricultural firms and their aggregate effects on resource allocation and income.

800. Special Readings in Agricultural Economics.
An in-depth study of the literature, the concepts and analytical tools for production economics, marketing or resource economics. Extensive assignments in the student's area of interest.

808. Agricultural Economy Theory Progress. (Saunders)
Prerequisite: Three senior division courses in agricultural economics or economics.
Review and analysis of economic theories and principles. Fundamentals of analyzing specific cause and effect of problems in agriculture.

809. Advanced Agricultural Price Analysis. (Miller)
Prerequisite: AEC 658, STA 621, or equivalent and consent of instructor.
Price theory is reconciled with problems of collecting and analyzing price data including sources and methods of collecting data and projecting trends. Linear programming theory, econometric methods, and economic theory are integrated in a comprehensive study of economic model building.

821. Agricultural Programs and Policy. (Saunders)
Prerequisite: Graduate standing.
An analysis of alternative governmental programs and policies as they relate to the solution of specific agricultural problems.

830–831. Agricultural Economics Research. 5 hours each.
Prerequisite: Graduate standing
Methodology, techniques and guidance for individual research in problems of agricultural economics.

840. AGRICULTURAL Market Structure and Analysis. (Nixon)
Prerequisite: AEC 658 or consent of instructor.
The role of the market in economic development and evaluation of structure, conduct and performance in the U.S. Agribusiness sector. Problems of market coordination and associated policy issues are investigated.

871. Advanced Agricultural Development and Growth. (Ames)
Prerequisite: AEC 471 (671) and ECN 410 or

equivalent and consent of instructor.
Analysis of major economic problems of the agricultural sector of developing countries, and a study of policy instruments which have been used to resolve these problems.

930. Thesis. 5-50 hours.

AGRICULTURAL ENGINEERING (AEN)

R. H. Brown
(Agricultural Engineering Center, South Campus)

Graduate study in engineering can be carried out in the area of agricultural engineering. The program leads to the degree Master of Science with a major in agricultural engineering and consists of 40 quarter hours in course work plus 10 hours for the thesis. The primary goals are to provide the student with knowledge of new and advanced concepts of engineering analysis and design, to deepen his understanding of the applied physical sciences, and to encourage independent scientific investigations and to develop habits of continuing education.

The principal facilities supporting this advanced study and research are located in the Agricultural Engineering Center. These facilities provide exceptional opportunities for investigations involving or requiring analog and digital computers, instrumented power units, waste management instrumentation, environmentally controlled rooms, water quality measurements, and specialized instrumentation for measurements of the physical properties of agricultural products.

Special opportunities are presented to study in modern laboratories devoted to mechanized harvesting, bioengineering, tillage, airborne particulates and soil dynamics laboratories and the possibility of conducting research at the Georgia or Coastal Plain Experiment Station add significantly to the advantages of graduate study at Georgia.

Assistantships are available for both the regular and the sponsored research programs of the department. An undergraduate degree in agricultural engineering is assumed. Graduates of other undergraduate engineering curricula may require additional background courses.

611. (FS) Food Engineering Fundamentals.

612. (FS) Food Engineering Fundamentals.

701. Agricultural Engineering Applications.
Prerequisite: ET 303 and EAG 336, or PAT 353 and AS 382, or equivalent.
The application of engineering fundamentals and techniques to the development of instructional programs and physical facilities for mechanics in secondary and area schools. (For non-engineering students.)

703. Functional Planning of Farm Structures and Utilities.
Prerequisite: ET 365 and AEC 301 or equivalent.
Basic problems in planning farm structures for typical agricultural enterprises in the Southeast; development, storage, treatment and distribution of farm water supplies; and the collection and disposal of sewage and farm wastes. (For non-engineering students.)

704. Modern Farm and Power Machinery. (Rice)
Prerequisite: ET 360 and AEC 301 or equivalent.
Characteristics and principles of farm tractors and power units, both self-propelled and tractor-drawn, and related machinery. Emphases are on selection, operation, care, maintenance and management. (For non-engineering students.)

705. Soil and Water Conservation. 3 hours. Two hours lecture and one 2-hour laboratory. (Cobb)
Prerequisite: ET 320 and AEC 301 or equivalent.
Technical aspects of soil and water conservation methods; planning and management of drainage, irrigation and erosion control measures. (For non-engineering students.)

706. Electric Power and Control. 3 hours. Two hours lecture and one 2-hour laboratory. (McLendon, Allison)
Prerequisite: ET 380 and AEC 301 or approval of instructor.
Principles of selection, installation and maintenance of electric motors, controllers, automatic control systems and electric heating and cooling equipment; electric measurements as evaluation techniques. (For non-engineering students.)

707. Farm Materials Handling. 3 hours. Two hours lecture and one 2-hour laboratory.
Prerequisite: AEN 706.
Selection and evaluation of equipment for conveying, grinding, mixing, separating, drying and storing farm products. Emphasis is placed on planning complete materials handling systems. (For non-engineering students.)

708. Special Problems in Agricultural Engineering Technology. (Harris)
Prerequisite: Three courses in agricultural engineering and consent of instructor.
A study dealing with special problems in mechanized agriculture with emphasis on appropriate engineering concepts, fundamentals, applications, and limitations. (For non-engineering students.)

802. Special Topics in Engineering.
Prerequisite: B.S.A.E. degree or equivalent.
Special problems in engineering design, analysis, or synthesis.

803. Bio-Engineering Systems. (Law)
Prerequisite: AEN 374 and 371.
Engineering principles applied to plant and animal systems and environments, including principles of thermodynamics and kinetics which underlie the function of living cells and organisms.

804. Electrical Engineering in Agriculture. (Brown)
Prerequisite: AEN 383, or equivalent.
The linear and piecewise analysis of certain electric circuits, machines, and transducers, and the design of electromechanical and electromagnetic systems for processing and evaluating agricultural products.

805. Agricultural Structures Design.
Prerequisite: AEN 355 and 371, or equivalent.
Methods of analysis of indeterminate structures, elastic arches, torsion of non-circular sections and related problems.

806. Advanced Farm Power and Equipment. (Rice)
Prerequisite: AEN 361 and 362, or equivalent.
Special problems dealing with design, development and testing of agricultural tractors and machines.

807. Soil and Water Conservation. (Chesness)
Prerequisite: AEN 325 and 356, or equivalent.
Advanced studies of water control and utilization through drainage, irrigation and conservation engineering.

809. Industrial Electronics. (Allison, McLendon)
Prerequisite: MAT 255, AEN 387.
Electronic circuits, tubes and transistors with special emphasis on the design of circuits for use with transducers of light, moisture, heat, sound, and mechanical motion.

810. Experimental Stress Analysis.
Prerequisite: MAT 255, AEN 355.
The use of electrical resistance strain gauges, brittle lacquers, photo-elastic methods, and

electronic equipment for stress analysis determinations.

811. Process Engineering. (Perry)
Prerequisite: AEN 371 and 381.
Evaluation and development of engineering aspects of the processing of agricultural products with emphasis on equipment, process control, materials handling, and plant layout and their combination into systems for processing agricultural products.

813. Research Methods and Instrumentation. (Clark)
Prerequisite: Graduate status.
Research problems, design and execution of experiments, and the principle applications and calibration of scientific apparatus and equipment used in research.

814. Similitude in Engineering. (Smith)
Prerequisite: BSAE degree or equivalent.
Dimensional Analysis, the theory of models and the methods of similitude are applied to the solutions of engineering problems and research. Selected illustrative models and applications are drawn from the agricultural engineering field of specialization.

930. Thesis. 5-50 hours.

AGRICULTURAL EXTENSION (AET)

J. J. Lancaster
(*Agricultural Extension Building, South Campus)*

The purpose of the graduate program in agricultural extension is to provide an opportunity for professional Cooperative Extension Service personnel to broaden and strengthen their base of technical knowledge and add the dimension of human and social relations that is so essential if one is to perform effectively the duties of a general adult educator within the context of the public service function of the University.

The curriculum leading to the Master of Agricultural Extension degree focuses on understanding the Cooperative Extension Service and how it works. Individual programs are built around the candidate's need for additional training in appropriate subject matter, human relations, communications, Cooperative Extension Service organization and methods, and informal teaching-learning.

Opportunities for study and research are offered in the Extension Education Department, College of Agriculture, other departments and divisions in the College of Agriculture, School of Home Economics, School of Forest Resources, other schools and colleges in the University and in the Cooperative Extension Service.

Details for entering the Master of Agricultural Extension degree program are found on page 31.

707. Program Building in Extension. (Lancaster)
Prerequisite: Graduate standing plus one year of experience in extension or closely related work.
A study of the basic problems, principles and procedures involved in program development in Cooperative Extension work.

708. Agricultural Extension Administration. (Lancaster)
Prerequisite: Graduate standing plus one year of experience in extension or closely related work.
A seminar in the organization, administration, operation, and evaluation of the Cooperative Extension Service and its educational programs.

710. Practicum in Cooperative Extension.
5-10 hours.
Prerequisite: Candidate selection by the Cooperative Extension Service and permission of instructor.
This course permits selected students to gain experience in leadership roles in the Cooperative Extension Service by working along with current leaders in a learning laboratory situation.

921. Problem Analysis in Cooperative Extension Work.
Open only to candidates for the Master of Agricultural Extension degree. Functional study of a topic or problem in Cooperative Extension significant to the candidate's area of work.

AGRONOMY (AGY)

W. L. Colville
(*Plant Sciences Building, South Campus)*

Doctoral language requirement, one foreign language. Graduate training leading to the M.S. and Ph.D. degrees is available in all phases of agronomy. In-depth instruction and research are emphasized in both crops and soils. Areas of major specialization in crops are: plant breeding and genetics, physiology, production and quality, forage utilization, and seed technology. Areas of major specialization in soils are: chemistry, classification, genesis, fertility, microbiology, mineralogy, plant nutrition and physics. Facilities available for graduate training include: seven agricultural research centers representing soil and climatic areas of the state, three well-equipped state Experiment Stations, and cooperative work is available with federal research laboratories in the fields of soil and water conservation, and agricultural product utilization. Interdepartmental cooperation in related fields is emphasized. Cooperative facilities for data analyses, model building, and system synthesis are available through the Computer Center.

Students with strong backgrounds in biological, geological, physical chemical and related sciences are encouraged as prospective candidates for graduate training in agronomy.

601. Seed Technology. (Parkman)
Prerequisite: BOT 380 or equivalent.
Seed and seedling structure; viability and vigor of seed; physiology of germination; dormancy; hard seeds; moisture determination; storage and longevity; sampling.

613AB. (ENT, HOR, PAT) Internship in Crop Protection and Pest Management. 1 hour each.
Prerequisite: Must be enrolled in professional Master's Plant Protection and Pest Management degree program.

An intern program where the student will be involved and become familiar with the applied aspects of plant protection and pest management.

623. Principles of Experimental Methods. (Morris)
Principles and practices in plant and animal research with special reference to the design and analysis of experimental plots. The applications of statistical methods to laboratory and field results are emphasized.

625. Pasture Development and Management (R. H. Brown)
Prerequisite: AGY 321 and 356 or equivalent.
Fundamental principles of growth and production of pasture plants; types of pastures and pasture vegetation; principles of establishment and management for economical production and soil conservation.

627ABC. Agronomy Seminar. 1 hour each.
Topics related to crops and soils to be discussed, including literature review and research results. Not open to agronomy majors for graduate credit.

634. Principles of Chemical Weed Control. 5 hours. Four hours lecture and one two-hour laboratory. (Elsner)
Prerequisite: BOT 380.
Chemistry of herbicides and mode of action of important weed control chemicals.

654. Soil Morphology and Classification. 5 hours. Three hours lecture and two 2-hour laboratories. (Perkins)
Prerequisite: Two senior division courses in agronomy or equivalent.
Morphological characteristics of soils, factors influencing these characteristics and classification of soils of the U.S. Several full-day field trips will be required at the student's expense. (Total cost about $25.)

658. Land Use and Soil Conservation. 5 hours. Four hours lecture and one 2-hour laboratory. (Giddens)
Prerequisite: Two senior courses in agronomy or equivalent.
Soil management practices pertaining to efficient land use and the application of these practices to farm planning, and soil conservation.

659. Soil Fertility. (Morris)
Prerequisite: Two senior courses in agronomy or equivalent.
Soil conditions affecting availability of plant nutrients, methods of determining soil fertility and insufficiency of plant nutrients in soils, and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management.

660. Soil Physics. 5 hours. Four hours lecture and one 3-hour laboratory.
Prerequisite: AGY 210 and one course in physics.
Physical properties, moisture relations and methods of physical analysis of soils.

661. (MIB) Soil Microbiology. 5 hours. Three hours lecture and two 2-hour laboratories. (Giddens)
Prerequisite: MIB 350 or equivalent.
A survey of microorganisms occurring in soil, carbon, nitrogen and mineral cycles, and the effect of microorganisms on soil properties.

662. Wastes and the Soil. 2 hours (Giddens)
Prerequisite: Permission of the instructor.
A study of the adsorption, transformation and movement of organic and inorganic wastes in soils and some problems in waste disposal.

663. Soil Mineralogy. 5 hours. Three hours lecture and two 2-hour laboratories. (McCreery)
Prerequisite: AGY 210.
Study of the mineral composition of soils and the relationship of the mineral problems of soil classification, soil physics, soil chemistry, and soil fertility.

664. Soil for Multipurpose Use. 5 hours. Four hours lecture and one 2-hour laboratory. (Perkins)
Prerequisite: Senior or graduate standing and at least two senior division courses in physical, chemical or biological sciences.
A study of the soil as an important part of our natural resources with emphasis on genetic properties which influence the soils use for nonfarm purposes and principles involved in developing and managing soils for a quality environment.

666. Soil and Plant Analysis. 5 hours. Four hours lecture and one 2-hour laboratory. (Reed)
Prerequisite: AGY 459.
Current techniques and methods of interpretation of soil testing and plant analysis.

800. Advanced Soil Chemistry. (Tan)
Prerequisite: CHM 390 or equivalent.
Application of the classical concepts of thermodynamics, colloidal and surface chemistry to soils. Emphasis is placed on interfacial phenomena. Discussion topics include chemical equilibria, ion activities, ion exchange, soil acidity, the theory of electric double layer, molecular adsorption and forces between soil particles.

801. Research Methods in Agronomy. 5 hours. Three hours lecture and two 2-hour laboratories. (Perkins)

Prerequisite: Two senior division courses in agronomy.
The course is designed to acquaint the student with the history and development of agronomic research. Instruments and techniques available as agronomic research tools will be discussed. Special emphasis will be devoted to specific problems in field, greenhouse, and laboratory investigations in which a research project outline will be prepared, an experiment designed and executed, and the data presented in written form adapted for publication in a professional journal.

810. Advanced Agronomy Seminar. 1 hour. Max. 6 hours. (Ashley)
Prerequisite: Graduate standing.
Topics relating to research in crops and soils, including literature review and results pertaining to local experimental work. Required of all graduate students.

812. Specialized Plant Breeding. (A. R. Brown)
Prerequisite: GEN 402.
Lectures and laboratory periods in the field on practices and techniques used in the development of crop varieties and hybrids. Will be offered Summer Quarter 1978 and alternate years thereafter. Course extends into Fall Quarter.

821–822. Special Problems in Agronomic Science. 1-5 hours each. (Colville)
Prerequisite: Graduate standing.
The planning, completion and reporting of short-time problems in one of the plant or soil sciences, other than thesis, conducted in the library, laboratory, greenhouse, or field.

827. Experimental Design. (Morris)
Prerequisite: AGY 623 or equivalent. (Not offered 1977–78)
A continuation of Agronomy 623, including the design and analysis of complex experiments with a large number of treatments. This course is designed to meet the needs of students in plant science.

828. Crop Response to Microclimate. 5 hours. Four hours lecture and one 2-hour laboratory. (R. H. Brown)
Prerequisite: BOT 380, CHM 261, two senior division courses in agronomy.
Relationships between the microclimate and growth of crop plant communities are studied. Physiological and morphological factors involved in response of crops to microclimate are discussed along with application of these principles to crop production.

829. Physiological Aspects of Plant-Soil Relations. (Ashley)
Prerequisite: Two senior division courses in agronomy or botany or permission of instructor.
An integration of the fundamental principles of chemistry, biochemistry and physiology as they relate to crop plant growth and development. Emphasis is placed on current concepts in basic sciences and the transposition of this information into workable tools for crop management and production.

852. Advanced Soil Fertility. (Morris)
Prerequisite: AGY 659 or equivalent. (Not offered 1978–79.)
Physical, chemical, and bacteriological aspects of soil fertility as related to plant growth.

853. Methodology in Soil Chemistry. 5 hours. Four hours lecture and one 2-hour laboratory. (Tan)
Prerequisite: CHM 280 and AGY 210 or equivalent.
Special treatment of methods used in soil and plant analyses. Emphasis is placed on chemical laboratory methods and equipment used in soil investigation; however, physical and biological methods are also presented. Interpretation of experimental data is stressed. Offered Spring 1977 and alternate years thereafter.

854. Advanced Soil Morphology and Genesis. (Perkins)
Prerequisite: AGY 654 and 659 or equivalent.
Morphological features of soils, factors influencing these features, and concepts and theories of origin and development of soils with emphasis on clay mineralogy.

860. Soil Physical Factors and Plant Growth.
Prerequisite: BOT 380 and AGY 660.
Consideration will be given to certain fundamental relations resulting when plants are subjected to a varying physical environment. Special emphasis will be placed upon the effects of soil moisture as related to plant growth, nutrient uptake and other physiological processes.

888. Quantitative Aspects of Plant Breeding. (Boerma)
Prerequisite: AGY 623, GEN 601, and GEN 602 or equivalent. (Not offered 1977–78)
A study of quantitative and population plant genetics and their interrelationship with plant breeding. Provides an understanding of genetic and environmental variation and how they relate to selection procedures and choice of type of variety.

930. Thesis in Agronomy. 5–50 hours.

ANIMAL AND DAIRY SCIENCE

L. J. Boyd
(*Livestock-Poultry Building, South Campus*)

ANIMAL SCIENCE (AS)

Doctoral language requirement: one language.

The Master of Science and Doctor of Philosophy degrees are offered in animal science with the opportunity to specialize in animal breeding, nutrition, physiology of reproduction, animal production, and animal products. Courses in the department and appropriate courses in dairy science, poultry science, biochemistry, statistics, microbiology and other departments provide in-depth training and laboratory experiences. Amino acid analyzers, gas-iquid chromatographs, a flame spectrophotometer, a gas flow Gieger tube detector, a whole body counter, an atomic absorption spectrophotometer, a sonoscope and other equipment are available for use in teaching and research. Research facilities include: laboratories equipped to handle radioisotopes and many chemical and biological analyses, small and arge animal metabolism rooms and equipment, emperature control chambers for small animals, and research facilities on farms located near the campus and in the state. Service of the University Computer Center is available for data processing.

Prospective students who desire financial aid may apply for assistance directly to the animal-airy science department. A limited number of eaching and research assistantships for training of students in both research and teaching nd assistance to the faculty are available. Other ssistantships are available through the Grad-ate School and application for these should be made directly to the Graduate School. Additional courses related to animal nutrition are listed under animal nutrition.

610. The Genetic Improvement of Farm Animals. (Benyshek)
Prerequisite: AS 310 or equivalent and one other senior division course in animal science or closely related department.
The detailed study of the principles of population genetics—gene frequency, genetic structure and forces influencing populations, population variance, breeding value, selection, relationship among relatives, systems of mating—as they relate to the genetic improvement of livestock.

636. (AN and PS) Ruminant Nutrition. (Lowrey)

637. (AN and PS) Monogastric Nutrition. (Fuller, Jensen)

640. Physiology of Reproduction in Farm Animals. Kiser)
Prerequisite: VPH 310 and at least one other senior division course in animal science or closely related field.
A study of the physiology of reproduction of farm animals, including the advanced aspects of the technological control of the reproductive processes.

710. Advanced Animal Breeding.
Prerequisite: AS 310 or permission of instructor.
An advanced course designed to provide current information relative to recent developments in the field of animal breeding and their impact on livestock breeding in present day practice as well as the scientific principles on which they are based. Limited to candidates for advanced degrees in education or agricultural extension.

730. Advanced Livestock Feeding.
Prerequisite: AS 331 or permission of instructor.
An advanced course designed to provide current information relative to recent developments in the field of animal nutrition and their impact on livestock feeding in present day practice as well as the scientific principles on which they are based. Limited to candidates for advanced degrees in education or agricultural extension.

810. Statistical Methods in Animal Science. (Benyshek)
Prerequisite: STA 422 or equivalent.
A study of experimental designs and statistical procedures particularly applicable to animal research with emphasis on multiple regression and least squares analysis.

811. Population Genetics. (Benyshek)
Prerequisite: AS 410 and 810, or equivalent.
Advanced study of population and quantitative genetics.

870–871. Special Problems in Animal Science. 5 hours each.
Prerequisite: AS 410 or 440, 436 or 437 or equivalent and permission of instructor.
Library and laboratory problems dealing with different phases of livestock production.

880. Seminar in Animal Science. 1 hour per quarter. Max. 6 hours.
jprerequisite: AS 310, 360, 361, and 440 or equivalent.
Weekly meetings devoted to discussions of current problems and research in the field of animal science.

930. Thesis. 5–50 hours.

DAIRY SCIENCE (DS)

Graduate programs leading to the MS degree are offered in all general areas of dairy manufacturing and dairy production. These programs are flexible enough to interest students who may want to consider the MS degree as a terminal degree and also, are designed to accommodate those graduates who want to use the MS degree as a preparatory step towards the PhD degree.

Two separate doctoral programs are available to dairy science production graduates. One leads to a PhD in animal nutrition and is in cooperation with the poultry science department. The second leads to a PhD in animal science with emphasis on either breeding, nutrition, physiology, or animal production.

Two programs leading to the PhD degree in dairy manufacturing are offered. One is in animal science products. The other, offered jointly with the food science department, gives a degree in food science.

641. Artificial Insemination. 2 hours. (Fosgate)
Prerequisite: VPH 310, DS 362 or 390, or equivalents.
A study of the genetic improvement resulting from the use of artificial insemination, the biochemistry of semen, reproductive physiology, and the principles underlying the dilution, freezing, and storage of semen at low temperatures. Emphasis is placed on cattle, horses, and swine.

642. Milk Secretion. 3 hours. (Fosgate)
Prerequisite: VPH 310, DS 372, 390, or equivalents. The application of certain fundamentals of anatomy, biochemistry, and physiology to a study of milk secretion. The relationship of various farm practices to maximum milk yields will be discussed from the fundamental standpoint.

652. (MIB) Microbiology for Sanitarians.
Prerequisite: DS/MIB 357.
Study of microorganisms in fluid milk and milk products, their relation to spoilage and epidemiology. Inspection and enforcement procedures.

653. (MIB) Microbiology of Fermented Dairy Foods. (Washam)
Prerequisite: DS/MIB 357.
Study of microorganisms utilized in manufacture of cheese, cultured milks, sour cream, and other dairy products. Defects caused by microorganisms and bacteriophages. Flavor development.

850. Dairy Chemistry. (Loewenstein)
Prerequisite: DS 352, 353 and 357 or equivalents.
A comparative study of the fundamental chemical and physical properties of milk and milk products. The basic laws concerning factors that affect the chemical compositions, pH, viscosity, surface tension and coagulation of milk will be studied. The course will consist of lectures, discussion, literature reviews, special reports and laboratory exercises.

851. The Nutritional Properties of Dairy Products. (Loewenstein)
Prerequisite: DS 850 or equivalent.
A study of the basic nutritional properties of the constituents of milk and milk products and the effect of processing and storage methods upon these nutritive values.

852. The Chemical Analysis of Dairy Products (Loewenstein)
Prerequisite: DS 851 or equivalent
Theory and practice in analytical methods used for control and research in dairy chemistry; analysis of milk fat, proteins, lactose, lactalbumin, lactoglobulin and minerals; methods of determining hydrolytic and oxidative rancidity; factors involving rennin action, surface tension, viscosity and freezing point determinations. The course consists of lectures and laboratory assignments.

853. Physical Chemistry of Dairy Products. (Loewenstein)
Prerequisite: DS 852, CHM 390, or equivalents.
Lectures and laboratory exercises concerning oxidation-reduction potentials, surface tension, absorption, plasticity, isoelectric point of proteins, colloidal properties of milk constituents, emulsions, and molecular dispersions as related to milk and milk products.

870–871. Special Problems in Dairy Cattle Feeding and Management. 5 hours each.
Prerequisite: DS 353, 363, and 390 or equivalent.
A study of research work on the subject with special problems to be selected.

872. Advanced Dairy Technology.
Prerequisite: DS 850 or equivalent.
A study of basic chemical, physical, bacteriological and mechanical problems involved in the engineering and design of dairy processing equipment; theories of heat transfer, thermodynamics; thermal properties of solids and liquids; properties of metals; utilization of high pressures, partial vacuums and mechanical principles as affecting design, construction and operation of dairy equipment.

873. Dairy Technology Problems.
Prerequisite: Two graduate courses in dairy science or equivalents, and the consent of the major professor
A special course for students qualified to carry out individual projects in dairy production, bacteriology or manufacturing. Work is done independently of the regularly scheduled classes. The course is available only to advanced graduate students and with the consent of the major professor.

880. Seminar in Dairy Science. 1 hour per quarter. Max. 6 hours.
Prerequisite: Consent of instructor and major professor
Weekly meetings devoted to discussions of research problems.

930. Thesis. 5–50 hours.

ANIMAL NUTRITION (AN)

W. J. Miller
(*Livestock-Poultry Building, South Campus*)

Doctoral language requirement: one-language, determined by advisory committee.

This program is interdepartmental, including the Departments of Animal and Dairy Science, and Poultry Science. It embraces both the basic and applied phases of nutrition including the metabolism, biochemistry, and physiology of minerals, lipids, carbohydrates, proteins, vitamins, etc., in monogastric and ruminant animals. Strong collateral support, through course offerings and research cooperation, also is available in the areas of biochemistry, physiology, genetics, statistics, veterinary medicine, and microbiology. Facilities for research include adequately equipped nutritional, biochemical, and physiological laboratories, experimental animal quarters for many farm and laboratory species and instrumentation for many types of metabolic studies including, for example, the use of isotopes. The goal is to provide a challenging program, supplying opportunity for the student to develop his/her creative ability to the point where his/her knowledge and motivation will enable him/her to make major contributions and assume leadership in the nutrition profession.

636. (AS, PS) Ruminant Nutrition. (Lowrey)
Prerequisite: AS 330, VPH 310, CHM 240, and BCH 310.
An in-depth study of digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora-microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption and utilization of nutrients. Provides a framework in which practical applications can be evaluated.

637. (AS, PS) Monogastric Nutrition. (Fuller, Jensen)
Prerequisite: AS 330, CHM 240, and VPH 310 or PS 380.
An advanced course in the comparative nutrition of monogastric animals with special but not exclusive consideration of poultry and swine. Guided studies of the literature of nutrition will be made enabling the student to witness the discovery of nutrition principles and to distinguish between established fact and unsolved problems.

831. Bioenergetics in Animal Nutrition. 3 hours.
Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401.
A detailed treatment of energy transformations in animals. Application of thermodynamic principles to the conservation and conversion of energy in animals. The energy values of feedstuffs as determined by various methods will be evaluated. (Offered alternate years.)

832. Vitamins in Animal Nutrition. 3 hours. (Lassiter)
Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401 and/or consent of instructor.
A comprehensive and systematic treatment of the chemistry and physiology of the vitamins and their roles in animal metabolism. Integrates cellular biochemistry and physiology of the vitamins. (Offered alternate years.)

833. Minerals in Animal Nutrition. 3 hours (Miller)
Prerequisite: AS 330, VPH 310 or PS 380, BCH 401.
A treatment in depth of the role of minerals in animals from the standpoint of their nutritional significance. Deals with the physical and chemical principles while emphasizing the dynamic behavior and function of individual elements in the organisms as a whole. (Offered alternate years.)

834. Proteins and Amino Acids in Animal Nutrition. 3 hours. (Seerley)
Prerequisite: CHM 240, AS 330, VPH 310 or PS 380, BCH 401 or 801.
A study of metabolism and utilization of dietary proteins and amino acids by animals. Methods of supplying the amino acids for most efficient utilization for maintenance, growth and the production of protein products. Evaluation of the quality of food proteins to meet nutrient requirements. Methods for separation of proteins, amino acid analysis and determination of protein quality will be studied. (Offered alternate years.)

835. Carbohydrates and Lipids in Animal Nutrition. 3 hours. (Jensen)
Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401 or 801.
An examination of the utilization and metabolism of carbohydrates and lipids by animals. A systematic evaluation of biochemical properties of carbohydrate and lipid foods and their effects on absorption and metabolism of the nutrients of the animal diet. (Offered alternate years.)

838. Experimental Methods in Animal Nutrition. (Britton)
Prerequisite: AS 330, CHM 240.
A laboratory course concerned with biochemical nutrition methodology and its utilization in performing experiments, recording and interpreting data and writing scientific reports.

839. Nutrition Seminar. 1–6 hours.
Prerequisite: Graduate standing.
Topical discussion of current problems and papers of scientific work in animal nutrition to be presented by the students, faculty and guest speakers.

930. Thesis. 5–50 hours.

ENVIRONMENTAL HEALTH SCIENCE PROGRAM (EHS)

659. (MIB) Microbiology of Water and Wastewater. 5 hours. Three hours lecture and two 2-hour laboratories. (White)
Prerequisite: MIB 350, CHM 261 or consent of instructor.
An in-depth study of the microbial life of water and wastewater, both domestic and industrial, with a close scrutiny of current treatment processes. Proper sampling methods based on statistical validity will be demonstrated along with proper storage of samples. Students will study domestic wastes and the effect of different types of industrial wastes on the microbial population of rivers and streams.

ANTHROPOLOGY (ANT)

Wilfrid C. Bailey
(*Baldwin Hall, North Campus*)

Doctoral language requirement: one language and a second language or a proficiency in a research tool to be determined by the student's advisory committee.

The Department of Anthropology offers programs leading to the degree of Master of Arts and the Doctor of Philosophy. Specialization occurs after the student obtains a broad background in anthropology. All students will be responsible for knowledge of physical anthropology, archaeology, social anthropology, and linguistics. It is assumed that this will be done at the M.A. level. At the Ph.D. level, the student will specialize in one of the four major areas of anthropology. He or she will meet the general departmental requirements and the special requirements for his field of concentration. Field work under faculty supervision is expected.

Unless otherwise stated, all graduate courses in anthropology must be preceded by Anthropology 102 and two advanced courses in anthropology or related fields.

600. Primitive Economic Systems. (Bailey)
Prerequisite: Twenty hours of senior division work in related fields of the social sciences.
The economic life of primitive peoples.

602. The American Indian. (Hally, Hudson)
A survey course on the cultural development of he aboriginal population of the New World.

605. Cultural Anthropology. (Bailey, Hudson, Olien)
Prerequisite: ANT 102.
Concepts and methods for analysis of the intitutions of non-literate peoples and their comarison with modern societies.

10. Social Organization of Primitive Peoples. Bailey)
rerequisite: ANT 102 or consent of instructor.
study of the social organization of primitive eoples. Concepts and methods for the analysis of social institutions of non-Western European societies.

612. Primitive Magic, Science, and Religion. (Hudson)
A critical historical survey of the various ways in which anthropologists have attempted to understand and explain exotic belief systems from the beginning of anthropology to the present day.

613. Comparative Belief Systems. (Hudson)
Prerequisite: ANT 412/612 or consent of instructor.
An examination of the structural properties of preliterate belief systems and the ideological consequences of literacy.

620. Field Methods in Archaeology.
Methods of archaeological reconnaissance, survey excavation, laboratory preparation and analysis of collected materials.

622. Introduction to Archaeology.
Prerequisite: ANT 102 or consent of instructor.
The course will survey a broad range of archaeological goals, methods, techniques and interpretations. Particular prehistoric cultural sequences or projects will be examined in depth. The interdisciplinary relationship of archaeology with other social, life, and earth sciences will be stressed. This course is prerequisite to all advanced courses in archaeology. Not for graduate credit for a degree in anthropology.

623. Introduction to Research Methods.
(Graybill, B. Smith)
Prerequisite: ANT 422/622.
The course will examine a variety of scientific, comparative, and analytical methods that are useful in Archaeological and general Anthropological research.

624. Laboratory Methods in Archaeology.
Prerequisite: ANT 422/622.
An introduction to the range of environmental, chronological, preservational, and analytical methods and techniques that are intrinsic to the accomplishment of archaeological research.

625. Old World Archaeology. (Graybill)
Prerequisite: 10 hours of senior division work in sociology or anthropology.
A survey of cultural developments in prehistory that range from the earliest evidence of man to the foundations of civilization.

626. New World Archaeology. (Hally)
Prerequisite: ANT 422/622.
A survey of aboriginal cultural developments throughout the New World from the first arrival of man in the hemisphere during the late Pleistocene to the demise of native cultures under intensive European contact.

630. Archaeological Theory. (Graybill, B. Smith)
Prerequisite: ANT 422/622.
A consideration of major theoretical contributions in Archaeology and Prehistory with emphases upon theory formulation, implementation, and revision.

631. Archaeology of Eastern North America. (Hally, B. Smith)
Prerequisite: ANT 422/622.
A survey of prehistoric and early historic cultural developments in the North American Plains and Eastern Woodlands.

632. Archaeology of Western North America. (Graybill)
Prerequisite: ANT 422/622.
A survey of the archaeological evidence of man in North America west of the Great Plains from the time of early entry into the New World until times of European contacts.

635. African Prehistory. (Graybill)
Prerequisite: ANT 422/622.
The range of prehistoric cultural variability is examined as well as the goals, procedures, and problems of accomplishing prehistoric research in Africa.

636. The Paleolithic of Asia and Europe. (Graybill)
Prerequisite: ANT 422/622.
A survey of technological and cultural variability of man and his immediate ancestors through the Pleistocene epoch, with a focus on cultural-environmental adaptation.

641. Indians of the Southeastern United States. (Hudson)
Prerequisite: ANT 102.
The study of the cultural and social characteristics of the indigenous peoples of the southeastern United States from the time of earliest European contact to the present.

642. Afro-American Societies. (Olien)
Prerequisite: Ten hours of advanced anthropology or ten hours in Afro-American studies.
Comparative ethnology of New World Black populations; special attention is devoted to the cultural adaptions of Black populations to various colonial and republican powers, with emphasis on Latin America and the Caribbean.

643. Middle America: Peoples and Institutions. (Olien)
Comparative ethnology of the Indians of Mexico and Central American from pre-Columbian times to the present.

644. Latin America: Peoples and Institutions. (Olien)
The study of contemporary Latin American peoples and institutions in their community setting; special attention is devoted both to the original impact of Western civilization on the indigenous Indian communities of Central and South America, and to recent social changes incident to the introduction of modern agricultural and industrial technology.

645. Africa: Peoples and Institutions. (Bailey)
Prerequisite: ANT 102 or consent of instructor.
The study of peoples and institutions of Africa, south of the Sahara, starting with earliest evidences of indigenous peoples; special emphasis will be placed on changes currently taking place.

646. South Asia: Peoples and Institutions.
Comparative ethnology of South Asia.

650. Methods in Social Anthropology. (Bailey)
An introduction to field methods used in social anthropology with emphasis on techniques used in the study of non-Western cultures and comparison with methods used in the study of contemporary American society.

652. History of Anthropological Theory. (Bailey)
A survey of the development of anthropological theory.

655. Ethnohistory. (Hudson, Olien)
An examination of the methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of Southeastern United States will be emphasized.

670. Principles of Physical Anthropology.
Prerequisite: ANT 102 or 5 hours in Biology.
Methods and theory related to the study of mechanisms in human variation, adaptation, and evolution from a biological perspective.

671. Human Origins. (Hurlich)
Prerequisite: ANT 470/670.
A study of the evolutionary history of the human species through examination of the fossil record.

672. Osteology and Osteometrics I. (Hurlich)
Prerequisite: ANT 470/670 or consent of instructor.
A comprehensive study of human skeletal anatomy and its relevance to taxonomic positioning of the genus *homo* and related non-human primates. Topics include: morphological variation, aging, sexing, paleopathology, paleodemography.

673. Osteology and Osteometrics II. (Hurlich)
Prerequisite: ANT 470/670 or consent of instructor.
A survey of human gross and non-human pri-

mate anatomy stressing function and morphological change in evolution from the viewpoint of physical anthropology and primatology.

680. (LIN) Introduction to Linguistics.
(Crawford, D. Smith)
An introduction to structural linguistics from the standpoint of anthropology, emphasizing elementary descriptive techniques and a consideration of the relationships among language, culture, and society.

681. (LIN) Linguistics: Phonology. (Crawford, D. Smith)
Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

682. (LIN) Linguistics: Morphology. (Crawford)
Grammatical analysis of phonemically transcribed data from numerous languages of the world.

683. (LIN) Types of Linguisitic Structures.
(Crawford)
Prerequisite: ANT 480/680 or consent of instructor.
A survey of linguistic structures as exemplified by selected languages of the world.

685. (LIN) American Indian Languages.
(Crawford)
Prerequisite: ANT 480/680 or consent of instructor.
The native languages of North America: classification, grammatical structures, and genetic affiliations.

688. (LIN) Linguistics: Field Methods.
(Crawford)
The technique of recording and analyzing a foreign language by working directly with a native speaker.

689. (LIN) Linguistics: Advanced Field Methods. (Crawford)
Prerequisite: ANT 488/688.
The technique of recording and analyzing a foreign language by working directly with a native speaker. Continuation of ANT 688.

690. Special Topics in Anthropology. 5–15 hours.
Prerequisite: Senior or graduate standing and 15 hours of advanced anthropology.
A program of semi-independent study including reading and discussions of current developments in anthropology.

715. Anthropology of Education. (Bailey)
Examination of the cultural aspects of educational processes and educational institutions in Western and non-Western societies.

800. Special Topics in Anthropology. 5–20 hours.
Opportunity to do intensive study on an individual basis in the field of the graduate student's major interest.

801, 802. Research in Southeastern Archaeology. 5 hours each. (Hally, B. Smith)
Prerequisite: At least 20 hours in anthropology and archaeology including the equivalent of a 400 course in American Indian archaeology or ethnology.
The student will pursue basic research on original materials, either in the form of field collections, or in exploration of an assigned site or archaeological structure, with full recording of all data and preparation of a report. A specific problem of unit research will be undertaken and carried to completion under the supervision of the major professor.

804. Seminar in Anthropology.
Selected topics in anthropology.

820ABCD. Seminar in Archaeology. 5 hours each.
Prerequisite: Graduate standing with 15 hours of advanced anthropology.
An advanced seminar for areas of special interest in the field of archaeology. Topics to be selected according to need.

834. (PSY) Functional Anatomy of the Non-human Primates. (Bernstein)
Prerequisite: Consent of instructor.
The close interrelationships between morphology and behavior are examined, beginning with communication and locomotion behavior and specific morphological adaptations and leading to a comparison of the diversities in the anatomy of the nonhuman primates with the purpose of discussing behavioral implications.

835. (PSY) Field and Laboratory Techniques in Physical Anthropology and Primatology.
(Bernstein)
Prerequisite: ANT 670 or PSY 675 and consent of instructor.
Different methodological approaches and their consequences are compared in both field and laboratory studies. Data collection and analysis techniques are related to theoretical explanations. Elementary statistics and familiarity with the basic subject matter is assumed.

870ABCDE. Seminar in Physical Anthropology. 5 hours each (Butler)
An advanced seminar for areas of special interest in the fields of physical anthropology and primatology. Topics to be selected according to need.

888ABC. (LIN) Seminar in Linguistics. 5 hours each. (Crawford)
Prerequisite: 15 hours of linguistics.
A study by the seminar method of theoretical and methodological problems in the study and analysis of languages.

930. Thesis. 5–50 hours.

ART (ART)

Francis Ruzicka
(*Visual Arts Building, North Campus*)

The Department of Art offers programs for the Doctor of Philosophy in Art, Master of Fine Arts and Master of Art in Art History, all organized to develop the student's creative independence and professional capability as a producing artist, designer, and scholar in a total environment of living art. In conjunction with the College of Education, the Department of Art offers programs in art education leading to the Master of Art Education, Specialist in Education, and Doctor of Education degrees. The departmental philosophy particularly stresses that the above goals meet in the art educator who must attain professional standards in the graduate studio as well as in the classroom.

The Visual Arts building, which has won national design awards, emphasizes the interdependence of art disciplines. It has studios and work areas for drawing and painting, art education, printmaking, photographic design, interior design, and ceramics. Art history is taught in specially designed and equipped classrooms and seminar rooms. Other buildings nearby house sculpture, jewelry and metalwork, graphic design, and fabric design. Limited numbers of graduate studios are available.

Applicants are admitted for all quarters. Deadlines are available upon request. Applications for departmental awards and assistantships should be made to the Graduate Coordinator of the art department before February 15th for the fall quarter. Information on additional fellowships will be made available upon request.

The Georgia Museum of Art has facilities for large traveling shows. A strong study collection of modern American art is supplemented by works on loan from the National Gallery in Washington, D.C.

The following review and evaluation procedures apply to all students enrolled in a program leading to the MFA degree in studio art:

> Upon completion of 20 quarter hours of resident graduate work, the student must pass an

oral examination which, with supporting creative studio work, will constitute an evaluation of his/her capability for continued enrollment in the MFA degree program. The evaluation will be conducted by a duly appointed faculty committee, which will determine if the student will be (1) continued in the regular MFA program, or (2) required to complete additional work beyond the regular MFA requirements, for the specific purpose of improving his/her skills, or (3) counseled to withdraw from the MFA program and consider alternative educational goals.

Students who successfully meet the requirements for continued enrollment in the MFA degree program, will be required to arrange a public thesis exhibition of creative studio work during the final quarter of residence. The exhibition will be evaluated by faculty, who will determine if the exhibited work represents a satisfactory level of professional accomplishment by the candidate. Faculty approval of the thesis exhibition is a departmental requirement for graduation. Also see page 32 for further details of the MFA program.

Although some courses listed below have specific prerequisites, instructors for graduate courses may waive some specific course prerequisites if the student can demonstrate adequate training or experience. Likewise, the instructor may advise a student to withdraw from the class due to inadequate preparation or motivation. Courses in the studio areas are usually held for two hours per day, but other arrangements may be made by the instructor.

601. Techniques of Art Appreciation and Criticism.
An inquiry into alternative modes of analyzing, interpreting and evaluating works of art; the construction of art appreciation curricula; critical technique as employed in classroom teaching strategies.

611. (PHY) Aesthetics.

635. Art Criticism. (Feldman)
Prerequisite: Four fine arts courses, two of which must be in the senior division.
The theory and practice of analyzing, interpreting and judging works of art. The student will be required to demonstrate competence in critical analysis and explication.

650–651. Guided Foreign Study in Art History. 5 hours each.
Prerequisite: Two senior division art history courses or comparable background and permission of instructor.
A systematic, on-the-spot study of a selected and logically unified group of art works found in foreign collections, sites, museums. The range of study will be determined by the instructor and basically be within the field of the visual arts. Where possible local library and archival resources will be used. Lecture and discussions before and during the period of travel will coordinate the activities and bring in factors of local governmental influence.

665. Renaissance Architecture. (Arntzen)
Prerequisite: Two senior division art history courses or equivalent.
A study of the "new" architecture of the 15th and 16th centuries, emphasizing such bases of the style as general principles, revival of classical forms, and individual contributions. Italian works by such masters as Brunelleschi, Alberti, Bramante, Michelangelo and Palladio will be discussed.

666. Architecture and Decoration in 18th Century France and England. (Arntzen)
Prerequisite: Two senior division art history courses or equivalent.
A study of the various styles of architecture and interior decoration in the two leading 18th century centers. Discussion will revolve around changing concepts of form, expanding sources of inspiration, reaction against tradition, and theoretical reevaluation of design. Topics to be considered are the rococo, Neoclassicism, the Gothic and Greek revivals, and the Chinese vogue.

673. The Classical Tradition in the Visual Arts.
Prerequisite: Two senior division art history courses or equivalent.
An analysis of classical styles from the 5th century B.C. through the 17th century. The classical tradition will be exemplified by such artists as Phidias and such monuments as the Parthenon and subsequent manifestations in the work of artists such as Raphael and Poussin. The course will present a unified picture of a continually evolving style in both the ancient and the modern world.

675. Greco-Roman Figurative Arts. (Caruso)
Prerequisite: Two senior division art history courses or equivalent.
A specialized study of Greek architecture and sculpture of the Hellenistic period. An interpretative approach to the evolution of the artistic style in the period of Alexander.

676. History of Hellenic Art. (Caruso)
Prerequisite: Two senior division art history courses or equivalent.
A study of the principles of archaic and early classical Greek sculpture and architecture.

677. The Roman Architectural Tradition. (Caruso)
Prerequisite: Two senior division art history courses or equivalent.
Roman art during the periods of the republic and the empire, while Rome was in direct contact with the great Hellenistic art centers such as Alexandria, Pergamon and Antioch; these contacts as they influenced Roman art; and the most significant results of these cultural interchanges to civilization.

679. Monuments and Styles of Western Art. (Sedgwick)
Prerequisite: Graduate standing, permission of instructor.
The Geography of Art. After a preliminary review of historical styles, the course (lecture & discussion) compares such geographical traditions as North and South in European art; the psychology of European "countries" such as French, Netherlandish, Italian; the contrast of modern Europe and America; the perennial contrast of worldwide East and West.

680. Art of the Italian Renaissance.
Prerequisite: Two senior division courses in art history or equivalent.
A study of the architecture, sculpture and painting of the 14th, 15th, and 16th centuries in Italy.

681. History of Northern Renaissance Art.
Prerequisite: Two senior division art history courses or equivalent.
Historical study of the architecture, sculpture, painting, and minor arts north of the Alps from the waning of the medieval period to around the beginning of the 17th century. The artistic achievements in France, Germany, England, and the Low Countries will be presented against the background of their political, social, and literary accomplishments.

682. Backgrounds of Modern Art, 19th Century. (DeZurko)
Prerequisite: Two senior division art history courses or equivalent.
A study of the cultural and historical roots of modern architecture, painting and sculpture as they are found in Europe during the 19th century. Particular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

683. Modern Art, 20th Century. (DeZurko)
Prerequisite: Two senior division art history courses or equivalent.
A study of the history of 20th century European architecture, painting and sculpture. Paricular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

685A. The Art of the Baroque in Italy, Spain and France. (Sedgwick)
Prerequisite: Two senior division art history courses or equivalent.
An analysis, beginning with the 17th century in France, Italy and Spain, detailing the rise of the Baroque and its development.

685B. The Art of the Baroque in Holland, Belgium and England. (Sedgwick)
Prerequisite: Two senior division art history courses or equivalent.
Intensive investigation of the art of Northern Europe, concentrating on such major artists as Rubens, Rembrandt, Vermeer and Van Dyck, while relating the art of the period to the political, philosophical and literary environment.

685C. Baroque Architecture. (Arntzen)
Prerequisite: Graduate standing.
Development of architecture and decoration in the 17th and 18th centuries. Relations with sculpture, gardening, city planning and other baroque forms will be considered.

688. The Art of Pre-Columbian America. (Walker)
Prerequisite: Two senior division art history courses or equivalent.
The art product of America from earliest times through the 15th century with emphasis given to the pre-Inca and Inca peoples of South America and the Maya, Zapotec, Toltec, Aztec, and related peoples of Mexico and Central America.

689. Post-Columbian Latin American Art. (Walker)
Prerequisite: Two senior division art history courses or equivalent.
A study of the unique product resulting from the combination of Western culture with native arts in Latin America from the 15th century to the present.

693A. Early Christian and Byzantine Art. (Polk)
Prerequisite: Two senior division art history courses or equivalent.
An analysis of the origins and the rise of early Christian architecture and art in the Mediterranean countries and of the beginnings of Christian art in the North.

693B. Early Medieval Art. (Polk)
Prerequisite: Two senior division art history courses or equivalent.
A study of architecture, painting and sculpture from the Carolingian to the Romanesque periods with emphasis on the Romanesque architectural ensembles.

693C. Gothic Art. (Polk)
Prerequisite: Two senior division art history courses or equivalent.
A study of Gothic architecture and art beginning with the developments of early Gothic architecture and sculpture in the twelfth century and ending with the international Gothic of the late fourteenth century. Special emphasis will be given to the architecture and sculpture of the important French cathedrals.

698. Arts of The United States Before 1865. (Walker)
Prerequisite: Two senior division art history courses or equivalent.
A study of the arts of the area of the United States beginning with that of the American Indians and continuing with the architecture, sculpture, painting, and minor arts from colonial times until 1865. The sources for these arts and their relationship to the physical and social situation.

699. Arts of The United States, 1865–Present. (Walker)
Prerequisite: Two senior division art history courses, or equivalent.
A study of the arts of the United States from 1865 through the periods of industrialization and international political and economic leadership. Stress is given the evolving role of American cultural characteristics found in architecture, sculpture, painting, and minor arts (particularly industrial design), their present-day manifestations and significance.

702. Drawing Composition. 5 hours. Five 2-hour studio periods per week.
Prerequisite: Graduate standing.

703. Drawing Composition. 5 hours. Five 2-hour studio periods per week.
Prerequisite: Graduate standing.

704. Advanced Lettering and Typography. 5 hours. Five 2-hour studio periods per week.
Prerequisite: B.F.A. equivalent and permission of instructor.
Creative manipulation of lettering, calligraphy, plastic patterns and technical processes integrated toward functional communication.

705. Art Experiences with Children.
Prerequisite: Two senior division courses in art.
Selection, discussion, implementation of creative art experiences with children. Evaluation of teaching experiences, observation, discussion and readings.

706. Art for Mechanical Reproduction. 5 hours. Five 2-hour laboratory periods per week.
Prerequisite: B.F.A. equivalent and consent of instructor.
Research in and experimentation with the manipulation of drawing and painting media and techniques applicable to mass reproduction through the medium of photoengraving.

707. Three-Dimensional Design. 5 hours. Five 2-hour studio periods per week.
Prerequisite: B.F.A. equivalent and consent of instructor.
Comprehensive problems in applied graphic and three-dimensional design. Emphasis will be placed on the developmental, structural and communicative processes, and the solution in environmental terms.

708. Special Problems in Graphic Design. 5 hours. Five 2-hour studio periods per week.
Prerequisite: ART 704, 706, 707 and consent of instructor.
Advanced individual research into graphic design media and techniques and their application to visual communication.

713. Crafts for Teachers.
Prerequisite: Two senior division courses in art, permission of instructor
A course in crafts for classroom teachers. Emphasis will be placed on the use of simple hand tools and materials in adapting a crafts program to children at various age levels, and in integrating this program with classroom activities.

716. Modeling and Carving.
Prerequisite: Two senior division courses in art, permission of instructor.
A course in sculpture for classroom and art teachers. Materials readily available to teachers, such as native clays, wood, metal and stone, will be used to develop a sense of the possibilities and limitations of each. Included is appreciation of plastic concepts of other periods and our own time.

717ABC. Advanced Printmaking. 5 hours each. Five 2-hour laboratory periods per week. (Morgan)
Prerequisite: Minimum of four senior division courses in drawing and painting.
Advanced work in printmaking media including the traditional intaglio processes of etching, engraving, dry-point, aquatint and mezzotint; the various relief and planographic processes, the collograph and serigraph processes and the combination of these various processes.

720. Photographic Design. 5 hours. Five 2-hour laboratory periods per week. (Sanderson)
Prerequisite: ART 320A, 320B, permission of instructor.
An investigation of the experimental potential of the light sensitive medium in an effort to implement an awareness and ability in this expanding and dominant mode of visual communication.

721AB. Photographic Design. 5 hours each. (Sanderson)
Prerequisite: ART 720, permission of instructor.
Independent investigation for students having sufficient background and technical skill in creative photography and design extension.

722AB. Photographic Design Problems. 5 hours each. (Sanderson)
Prerequisite: Graduate standing, permission of instructor.
Proposal and solution of technical and design problems in photography based on thorough search of literature and individual experimentation.

723AB. Special Problems in Art Education. 5 hours each.
Prerequisite: Permission of instructor.
Specific problem areas, according to individual needs, are investigated, discussed and evaluated.

725. History of Photographic Design.
Prerequisite: ART 320a, permission of instructor.
A survey of the historic images and design influences of photography as they relate to the important personalities and techniques of this discipline.

731. Painting. 5 hours. Five 2-hour studio periods per week.
Prerequisite: Graduate standing.

732. Painting. 5 hours. Five 2-hour studio periods per week.
Prerequisite: Graduate standing.

735. Philosophy of Art Education. (Feldman)
Prerequisite: Two senior division courses in art.
The course deals with the theoretical grounds for the conduct of art instruction as found in the thought of William Morris, John Dewey, Russell Lynes, Louis Kronenberger, Viktor Lowenfeld, Thomas Munro, Moholy-Nagy, Lyman Bryson and others.

736. The Teaching of Art in the Secondary School. 5 hours. Five 2-hour periods per week.
Prerequisite: Two senior division courses in art.
For advanced students in art education and administration of secondary school programs. Recommended practice in qualitative curriculum planning, together with laboratory projects that identify the unique problems in secondary school art, including philosophical, motivational and evaluative aspects.

737. Curriculum Development in Art Education.
Prerequisite: Two senior division art or art education courses and permission of instructor.
The following major substantive issues in curriculum development in art education will be considered and analyzed: meaning and method of curriculum improvement; guide lines for curriculum improvement; curriculum decision making; testing and evaluating operational curriculum innovations; and focus on change.

739. Supervision of Art.
Prerequisite: Two senior division courses in art.
A seminar approach, dealing with the specific problems of the supervisor, consultant or director of the art program in the community schools, including qualitative curriculum planning and strategies for building the art potential of the classroom teacher.

740. The Teaching of Art in the Elementary School. 5 hours. Five 2-hour periods.
Prerequisite: Two senior division courses in art.
For advanced students in art education and administration of elementary school programs. Recommended practices in qualitative curriculum planning, together with laboratory projects that identify the unique problems in elementary school art, including philosophical, motivational and evaluative aspects.

741. History of Art Education.
Prerequisite: Two senior dvision courses in art or art education.
The development of art educational theory and practice in the institutional setting of American schools, beginning with the industrial arts and drawing instruction initiated in the Massachusetts schools in the 19th century; the theories of Arthur Wesley Dow, Walter Smith, Royal Bailey Farnum, Norman C. Meier, John Dewey, Viktor Lowenfeld, Thomas Munro, and others. European figures such as Franz Cizek, Herbert Read, Walter Gropius, and L. Moholy-Nagy will also be considered.

742. Docentship.
Prerequisite: Two senior division courses in art or art education.
Problems of museum art education; use of collections in painting, sculpture and the applied arts as material for instruction for school groups and the general public; the organization of curricular materials based on museum holdings; planning of exhibitions and exhibition programs. Students will be assigned practical problems in coordination with the Georgia Museum of Art.

743. Readings in Art Education.
Prerequisite: Graduate standing as art education major.
An inquiry into the dominant forces that have shaped and are influencing contemporary art education. Consideration will be given to the writings of Plato, Aristotle, Rousseau, Herbert, Pestalozze, Forebel, Dewey, Bruner and McLuhan.

748. History of Fabric Arts. (Kaufman)
Prerequisite: Two senior division courses in art.
Study of the historical development of the fabric arts from the prehistoric period to the present. Consideration will be given to design, process, and use of fabrics. The work of specific artists of the late 19th and 20th centuries will be reviewed.

749. Fabric Design. 5 hours. Five 2-hour laboratory periods.
Prerequisite: Art 350A and permission of instructor.
Investigation of non-woven structures (looping, coiling, crochet, etc.) and utilization of their unique potentials.

750AB. Fabric Design-Structure. 5 hours each.
Prerequisite: Two senior division fabric design courses and permission of instructor.
Problems in fabric structure for advanced students in fabric design who are able to carry on independent study. Research problems combining process with design in consultation with the instructor.

751AB. Advanced Fabric Design. 5 hours each.
Prerequisite: Two senior division courses in fabric design and permission of instructor.
Problems in fabric decoration for advanced students in fabric design who are able to carry on ndependent study. Research problems combinng dye, fiber and application process with design and function in consultation with the instructor.

52. Jewelry and Metalwork. (Noffke)
Prerequisite: Two senior division courses in ewelry or metalwork, and permission of instrucor.
n investigation into the properties of various netals and how those properties relate to proesses and function of form and aesthetics.

53ABC. Jewelry. 5 hours each. (Noffke)
rerequisite: Art 752.
n advanced study of jewelry making processes nd development of individual interpretations of hose processes and products.

54ABC. Metalwork. 5 hours each. (Noffke)
rerequisite: Art 752.
n advanced study of metalworking processes nd development of individual interpretations of hose processes and products.

60. Advanced Ceramic Design. 5 hours. Five -hour laboratory periods.
rerequisite: A minimum of two senior division ourses in ceramics.
his course is designed to promote individual evelopment in the use of the materials and proesses of the ceramic designer. Emphasis will be aced upon the functional and aesthetic requirements of form and ornament in contemporary ceramics.

761. Historical Processes in Ceramics. 5 hours. Five 2-hour laboratory periods.
Prerequisite: ART 760.
This course is planned to offer the graduate student an opportunity to do individual research into the ceramics of the past and to adapt the knowledge obtained to technical and aesthetic solutions of contemporary problems.

762. Individual Research in Ceramics I.
Prerequisite: ART 761.
The posing and solving of technical and design problems in ceramics based on thorough investigation of available literature and on information gained in individual experimentation.

763. Individual Research in Ceramics II.
Prerequisite: ART 762.
A continuation of ART 762.

770. Organic Design in Contemporary Living.
Prerequisite: Graduate standing, permission of instructor.
A course planned to meet the needs of those who teach or supervise art. In it, students will design mobiles and other constructions in space. They will experiment through photograms, abstract films and movement of forms in colored light. Also, in the design of a space area in a school, home, or community, they will organize their creative work to meet a two-fold objective that is both utilitarian and aesthetic.

771. Sculpture—Construction. 5 hours. Five 2-hour laboratory periods.
Prerequisite: Graduate standing.
This course deals with problems of composition, abstract and figurative, as they relate to sculpture in the round and relief.

775. Advanced Figure and Portrait Study in Sculpture. 5 hours. Five 2-hour laboratory periods.
Prerequisite: Graduate standing.
Advanced figure modeling. Working in a variety of media from the model, emphasizing the structural and sculptural aspects of form. Anatomy and use of anatomical forms are also stressed.

776ABC. Sculpture Materials. 5 hours each.
Prerequisite: Graduate standing, permission of instructor.
A course concerned with the student relating formal three-dimensional concepts of sculpture as they apply to material or combinations of materials. The student has his choice of working in depth in such materials as cast bronze, cast cement, direct plaster, direct cement, fire clay, welding metal, stone, and wood.

778ABC. Construction Composition—Advanced Techniques in Metalcasting. 5 hours each.
Prerequisite: Two senior division courses in sculpture, permission of instructor.
The production of wax models, venting, investing, casting, chasing and mounting of finished work will provide the student with an opportunity to carry on independent experimentation and study within the medium of cast bronze sculpture.

789. Interior Design. 5 hours. Five 2-hour studio periods.
Prerequisite: Three senior division courses in interior design.
An investigation into the problems of the planning of architectural spaces for public and residential uses. Research studies will be made into the disposition of space, type of historical or contemporary decorative treatments, types of equipment and furnishings, materials and color coordination. Problems and readings.

790. Interior Design. 5 hours. Five 2-hour studio periods.
Prerequisite: Three senior division courses in interior design.
Investigation into the designing of special equipment: furniture, built-in equipment, special lighting, and custom design. Special emphasis on research into historical procedure in design and construction.

791. Interior Design. 5 hours. Five 2-hour studio periods.
Prerequisite: Three senior division courses in interior design.
Individual creative problems of coordination of all aspects of interiors from original concept to completed finished drawings and presentations of material schedules.

792. Procedures in Interior Design. 5 hours. Five 2-hour laboratory periods.
Prerequisite: ART 789, 790, 791.
Procedures and ethical practices of interior design execution, designer-client relations, presentation of drawings, pricing, wholesale buying, trade showrooms and preparation of various types of contracts. Studies will be made of the qualitative aesthetic values as they relate to monetary values in the preparation of plans for various types of contract work.

798ABC. Independent Study in Major Studio Area. 5 hours each.
Prerequisite: Graduate standing, permission of instructor
A course designed for the graduate student to pursue individual studio projects in art, emphasizing investigation of specific problems under the direction of his major professor or under the direction of a professor approved by his major professor.

800–801. General Art. 5 hours each.
Prerequisite: Graduate standing, permission of instructor.
A course designed for the graduate student to pursue individual projects in art. Should not be taken until after ART 798ABC numbers have been used.

804. Drawing Composition. 5 hours. Five 2-hour studio-lecture periods.
Prerequisite: ART 703, permission of instructor.
Advanced study of the relationship of principles to picture structure. Readings in the fields of art history and analysis.

810. Graduate Seminar in Art.
Prerequisite: Graduate standing in art.
A course taught by senior members of the department or distinguished visiting professors who share with the students during the culminating stages of graduate study their insights and experience with the arts in contemporary culture.

815. Philosophy of the Visual Arts. (Feldman)
Prerequisite: Two senior division courses in art or the equivalent.
An examination of the functions of painting, sculpture, architecture and the applied arts and the relevance to the arts of the theories of such thinkers as Freud, Marx, William Morris, Ortegay Gasset, Lewis Mumford, and John Dewey.

816. The Creative Consciousness. (Collier)
Prerequisite: Graduate standing, permission of instructor.
A study of the creative mind and plastic expression in terms of the artist's response to the phenomenological world, and his response to the inner imaginative processes of his own psyche.

833. Painting. 5 hours. Five 2-hour studio-lecture periods.
Prerequisite: Permission of instructor.
A comparative study of theories pertaining to the means in painting as they relate to the painting act. Readings in the fields of art criticism and aesthetics.

840. Art Instruction in Higher Institutions.
Prerequisite: Bachelor's degree in art and at least 25 credits completed toward the master's degree.
The problems of planning curricula and conducting instruction in art in community colleges, four-year colleges and in universities; the philosophy of art in higher education; discussion of alternative modes of instruction in studio and theoretical art courses.

841. Art Administration in Higher Institutions. Prerequisite: ART 840, candidacy for doctorate.
Art administration in colleges and universities with emphasis on decision-making as it affects the following: program development, faculty recruitment and evaluation, personnel problems, art admission policies, exhibition programs, interdisciplinary studies, articulation with non-art curricula. Outside authorities will be consulted in the areas of their special competence.

855. Modern Architecture: Its Origins and Development. (DeZurko)
Prerequisite: Two senior division courses in art history.
An historical study of the development of modern architecture from its origins in the functional and geometric architecture of the 18th century to present day manifestations. The development of architecture is seen against a background of changing social and personal needs of men and the development of technological means for satisfying these human needs.

856. Modern Architecture and its Theoretical Basis. (DeZurko)
Prerequisite: Two senior division courses in art history.
Reports and discussions of the contributions of outstanding pioneers to the development of modern architecture. Attention will be given to such leaders of the modern architectural movement as Sullivan and Wright in the United States, and Gropius, Mies van der Rohe and LeCorbusier in Europe. The architectural theory will be studied against a background of the actual architecture of these men.

880–881. Special Problems in History of Art. 5 hours each.
Prerequisite: Graduate standing and permission of faculty.
Individual research and group presentation and discussion of specific problems in the history of art.

888ABC. Reading and Seminar in Latin American Art. 5 hours each. Max. 15 hours. (Walker)
Prerequisite: Advanced standing in graduate art.
A study through assigned readings, seminar reports, projects and critical discussion of specific areas and problems in the visual arts of Latin America.

889. Origins of Modern Art. (Sedgwick)
Prerequisite: Two senior division art history courses.
Problems in what constitutes the modern, from its inception in Goya and the revolutionary generation to its emergence in the generation of Cézanne.

890. Objectives of Twentieth Century Art. (Sedgwick)
Prerequisite: ART 889 or permission of instructor.
A consideration of painting and sculpture today against its historical background, with the purpose of illustrating the links between characteristic contemporary expressions and the work of the past accepted as belonging to the Central Western tradition. A reading seminar related to lectures.

898ABC. Reading and Seminar in the Visual Arts of Modern Europe. 5 hours each. (DeZurko)
Prerequisite: Advanced standing in graduate art history or European history studies.
A study through assigned readings and seminar reports of statements by artists, critics, scholars and public officials related to art exhibitions, schools and movements in modern Europe.

899ABC. Reading and Seminar in the Visual Arts of United States. 5 hours each. (Walker)
Prerequisite: Advanced standing in graduate art history or American studies.
A study through assigned readings and seminar reports of statements by artists, critics, sc olars and public officials related to art exhibitions, schools and movements in the United States.

921. Art Problems.
Prerequisite: Admission to candidacy for M.F.A. degree in art.
Project of original creative works of high professional standards, together with a written report in which use is made of photographs or drawings or both. The student will be required to present a comprehensive exhibition of his graduate creative work.

930. Thesis. 5–50 hours.
Open only to candidates for M.A. and Ph.D. degrees in art.

EAR 765. Applied Project in Art Education.
For candidates for the Master of Art Education degree.Prerequisite: Four courses in education, advanced graduate standing, and permission of advisor.
Functional study of a topic or problem in art education significantly related to the student's professional task. This may involve a research project, an exhibition of graduate creative work, or a combination of both.

EAR 930. Thesis in Art Education. 5–50 hours.
Limited to prospective candidates for the Doctor of Education degree with a major in art education.

AVIAN MEDICINE (AM)

Stanley H. Kleven
(*Poultry Disease Research Center, College Station Road*)

The Master of Avian Medicine is designed to provide veterinarians with specialized training in the diagnosis, treatment and prevention of poultry diseases. The degree is open to student who hold the Doctor of Veterinary Medicie degree. Details of this program may be found on page 00.

614. Avian Necropsy.
Prerequisite: Consent of instructor.
Necropsy and supportive diagnostic laboratory procedures are used to establish diagnoses of avian diseases. Various therapeutic and prophylactic measures which might be applied are discussed and appropriate recommendations for clients are determined. Problem-oriented medical records are maintained for discussion and audit.

615. Avian Preventive Medicine.
Prerequisite: Consent of instructor.
Avian diseases are studied and evaluated under field conditions. Various problem-solving approaches are considered. Appropriate supportive laboratory procedures are done, results considered, and recommendations for treatment, control, and prevention are made.

808. (PS) Parasitic Diseases of Poultry. (Reid)

809. Poultry Diseases and Parasites.
(Davis, Page)
Prerequisite: Consent of instructor.
An intensive course in poultry disease diagnosis. Various diseases will be studied, using cases sent in from the field as materials, and the development of skill in the use of laboratory diagnostic techniques will be emphasized. (Spring quarter only.)

811. Problems in Poultry Diseases and Parasites.
Prerequisite: AM 809 and/or consent of instructor.
A graduate course which allows students to work intensively on approved poultry disease and parasite problems after selection of the specialized area with the appropriate staff member.

815ABC. Avian Medicine Seminar. 1 hour each.
Prerequisite: Consent of instructor.
Presentation and discussion of current diagnostic cases including clinical history, gross necropsy findings, laboratory data, histopathology, diagnostic possibilities, and case management. Current research activities will also be presented and discussed.

822. (VPP) Microscopic Pathology of Poultry.
(Fletcher)

BIOCHEMISTRY (BCH)

H.D. Peck
(*Boyd Graduate Studies Building, South Campus*)

Doctoral language requirements: one language.

The Department of Biochemistry is one of six departments comprising the Division of Biological Sciences in the Franklin College of Arts and Sciences. It functions largely as a graduate department with programs of study leading to the M.S. and Ph.D. degrees. Facilities for graduate training include the research equipment in the department, since the M.S. and Ph.D. are awarded for research performed. There are 10 large research laboratories for biochemistry in the Graduate Studies Building, a $6.5 million facility completed in 1968. Two other research laboratories are located in a nearby building which also houses a fermentation plant, with facilities for the large-scale production and processing of microorganisms. Animal quarters are located in the Graduate Studies Building. Access to modern greenhouses and growth chambers give the department facilities to work with any type organism.

The research laboratories are equipped with most of the specialized equipment required for modern biochemical research and includes automatic amino acid analyzers, analytical and preparative ultracentrifuges, liquid scintillation counters, recording spectrophotometers, spectrofluorimeters and stopped-flow devices, an electron paramagnetic resonance spectrometer, a high resolution mass spectrometer, and other specialized equipment.

Graduate students are normally admitted at the beginning of fall quarter, but in special cases a student may be admitted in January, March, or June. Deadline for most fellowships and assistantships is February 15, but certain others are awarded at other times.

In addition to the courses listed below, a number of interdisciplinary courses such as Molecular Genetics (BIO 882), Development in Eucaryotes (BIO 885) and Research Techniques in Molecular Biology (BIO 890) are normally taken by students in the biochemistry graduate program. The biology listings as well as those in botany, microbiology and zoology should be consulted to determine the range of courses available to graduate students majoring in biochemistry.

601. Intermediate Biochemistry.
Prerequisite: CHM 341 or equivalent.
An intermediate-level course in general biochemistry which stresses the physical and chemical properties of biological molecules. NOTE: This course will not serve as a prerequisite for advanced subject matter courses in biochemistry.

602. Intermediate Biochemistry.
Prerequisite: BCH 601.
An intermediate-level course in general biochemistry which stresses intermediary metabolism. NOTE: This course will not serve as a prerequisite for advanced subject matter courses in biochemistry.

603. Laboratory Techniques in Biochemistry. (Brewer)
Prerequisite: One quarter of biochemistry or consent of instructor.
A course designed to acquaint the student with basic techniques in biochemistry, to include enzyme assay and purification, nucleic acid purification and characterization, chromatography, spectrophotometry, and other modern techniques.

605. Introductory Physical Biochemistry. 3 hours (Lee)
Prerequisite or corequisite: CHM 691a.
This course applies the principles of physical chemistry to specific problems in biochemistry. Topics include bioenergetics, thermodynamics, and equilibria.

606. Introductory Physical Biochemistry. 3 hours (Lee)
Prerequisite or corequisite: CHM 691b.
This course applies the principles of physical chemistry to specific problems in biochemistry. Topics include kinetics, electrochemistry, surface chemistry and membranes.

610. General Biochemistry.
Prerequisite: CHM 341 or equivalent.
A beginning graduate level course in biochemistry for students requiring an intensive one quarter theory course as a background for applied courses in the life sciences.

635. (PCS/BIO) Molecular Biophysics.

801. Advanced Biochemistry.
Prerequisite: CHM 341 or equivalent.
An advanced course in general biochemistry designed to acquaint the student with the chemistry of essential cell constituents emphasizing aspects of importance in metabolism.

802. Advanced Biochemistry.
Prerequisite: BCH 801.
An advanced study of the intermediary metabolism of carbohydrates, fats and amino acids including the biosynthesis and function of proteins and nucleic acids.

803. Experimental Biochemistry. 3 hours. One hour lecture and two 3-hour laboratory periods.
Prerequisite: BCH 802.
A course designed to give the advanced student experience in the experimental techniques used in modern biochemistry, to include enzyme assay, purification and characterization, nucleic acid extraction and characterization utilizing a variety of modern experimental techniques.

804. Phytochemistry.
Prerequisite: BCH 802 and one course in botany.
A course emphasizing autotrophic aspects of plant metabolism, photosynthesis, nitrogen fixation, and integration with unique metabolic pathways in plants.

805. Biochemistry of Macromolecules. (Brewer)
Prerequisite: BCH 802 and two courses in physical chemistry.
A study of the chemical and physical principles employed in the study of macromolecules of biological importance.

806. Enzymology. (DeSa, Ljungdahl, Peck)
Prerequisite: BCH 802.
A study of enzyme kinetics, multi-enzyme systems, and the structure, regulation and biosynthesis of enzymes.

807. Advanced Enzymology. (DeSa, Ljungdahl)
Prerequisite: BCH 806.
A course stressing advanced theory in enzymology to include computer techniques in enzyme kinetics, rapid reaction kinetic analysis, determination of enzyme structure, active site analysis of enzymes, coenzyme function, and related topics.

808. Biochemical Research Techniques. (Lee, Mendicino)
Prerequisite: BCH 802 and consent of head of department.
A course designed to acquaint the advanced student with research techniques used in biochemistry, including techniques for isolation, identification and analysis of biological compounds.

809. Mechanisms in Enzyme Catalysis. 3 hours.
Prerequisite: BCH 807.
An examination of the basic principles regulating catalysis in model systems and the application of these principles to enzyme catalyzed reactions.

810. Biochemistry Seminar. 1–8 hours.

812AB. Special Topics in Biochemistry. A—3 hours; B—5 hours.
Prerequisite: Consent of head of department.

814. Introduction to Research in Biochemistry. 5 hours. Three lectures and two library or laboratory periods.
Prerequisite: Consent of head of department.
A course designed to acquaint the incoming student with biochemical laboratory, computer, and library facilities.

820. Carbohydrate Metabolism. (Mendicino)
Prerequisite: BCH 802.
An advanced course in carbohydrate metabolism to include methods used in elucidation of pathways, regulatory control, and structural determination of products and intermediates.

824. Lipid Biochemistry. 5 hours. Four hours lecture and one 2-hour laboratory. (Peifer)
Prerequisite: BCH 802 or consent of head of department.
A study of the comparative biochemistry of the major classes of lipids including the fatty acids, steroids and sterol esters, glycerides, phospholipids, cerebrosides, sulfolipids, and lipoproteins.

826. Mammalian Biochemistry. (Travis)
Prerequisite: BCH 802.
A course designed to acquaint the advanced student with the biochemical reactions unique or of extreme importance in mammals. These include blood chemistry, hormonal effects, urine metabolism, mineral metabolism, digestion, and other biochemical reactions important in this group of animals.

830. Biochemistry of Reproduction. (Srivastava)
Prerequisite: BCH 802 or consent of department.
A study of the biochemical events which influence the process of mammalian reproduction.

892. (BOT) Nucleic Acid. (Champney, Rawson)
Prerequisite: BCH 802 or consent of instructor.
An advanced biochemistry course concerned with the physical chemistry, structure and function of nucleic acids. Specific topics include the isolation, structure, chemical analysis, hybridization, enzymology, and replication of DNA and RNA. Nucleic acid enzymes and protein-nucleic

acid interactions in ribosomes, protein synthesis, viruses and chromosomes will also be examined.

900. Laboratory Research in Biochemistry. 5–50 hours.
Prerequisite: Consent of head of department.

901. Problems in Biochemistry. 1–15 hours.
Prerequisite: Consent of head of department.

930. Thesis in Biochemistry. 5–50 hours.

BIOLOGICAL SCIENCES (BIO)

Joe L. Key
(*Biological Sciences Building, South Campus*)

The division consists of the Departments of Biochemistry, Botany, Entomology, Microbiology, Zoology and that part of Psychology that pertains to biological systems. Degrees are granted only through the departments. However, some courses that have subject matter common to all the departments are listed under the division.

635. (BCH/PCS) Molecular Biophysics.

701. Biological Electron Microscopy. 5 hours. Three lectures and two 3-hour laboratories.
Prerequisite: BIO 102 or equivalent, 3 quarters of Introductory Chemistry, 3 quarters of Introductory Physics, and/or consent of instructor.
Ultramicrotoym and other basic methods for preparing and examining biological material by electron microscopy. Instrument theory.

800. Tropical Biology: An Ecological Approach. 12 hours.
Prerequisite: Graduate standing in one of the biological sciences; at least one course each in botany, zoology and general ecology. Given in Costa Rica February-March and July-August by Organization for Tropical Studies.
Introduction to biological concepts in the tropics through intensive field study. Applications required usually before November 1 and December 1.

882. Molecular Genetics. 5 hours. Two 2-hour lectures and one discussion session. (Carlton)
Prerequisite: BIO 320 and BCH 801 or equivalent.
An advanced course on the molecular mechanisms of gene action in bacteria and bacteriophages including discussions of chromosome structure and replication, mutagenesis and DNA repair, recombination mechanisms,

transcription and translation controls, and molecular mechanisms of genetic regulation.

883. Advanced Topics in Genetics. 1–5 hours per quarter. Max. 15 hours.
Prerequisite: BCH 802 and 882, or ZOO 614; permission of instructor.
A reading and/or discussion course for advanced students with previous preparation in graduate level genetics. Topics will vary depending on instructor(s) but will involve in-depth analysis of such areas as genetic regulatory mechanisms, advanced aspects of ecological and population genetics, extrachromosomal genetics, molecular aspects of recombination mechanisms, ribosome synthesis and control, plasmid genetics, cytogenetics, and human genetics.

885. Molecular Genetics and Development in Eucaryotes. 5 hours. Two 2-hour lectures and one discussion session. (Kochert)
Prerequisite: BIO 882 or BCH 892 or permission of the instructor.
An advanced course on the molecular and genetic basis of development in eucaryotes. Topics discussed include: organization of the eucaryotic genome and the molecular basis of gene regulation, genetics and development of organelles, cell and tissue interaction in development, hormonal mechanisms, and somatic cell genetics.

890A. Research Techniques in Genetics. 5 hours per quarter. Max. 10 hours.
Prerequisite or Corequisite: One graduate level course in Genetics and permission of instructor.
A course designed to teach techniques employed in genetics research by student participation in the research projects of members of participating faculty. A student will spend five weeks in the laboratories of each of two faculty members. A maximum of two terms may be taken for credit.

BOTANY (BOT)

Joe L. Key
(*Plant Sciences Building, South Campus*)

Doctoral language requirement; one language determined by student's advisory committee.

Graduate work leading to the MS or PhD degree in botany may be undertaken by qualified students. All students are expected to have had the equivalent, or take while here, the minimum core courses required of all candidates for the BS degree in botany. All other degree requirements are determined by the major professor and student in consultation with an advisory committee. Inquiries by prospective students should be addressed to: Coordinator of Graduate Studies, Department of Botany. He will advise you of available financial assistance.

Facilities for graduate training in botany include greenhouses, growth chambers, field plots, a herbarium, electron microscopes, a histochemical and cytochemical laboratory, and a facility for the study of the molecular aspects of plant growth and development. Students planning careers in modern plant science are encouraged to take courses in other areas of biology and related plant science departments. Research opportunities are also offered in the University Computer Center, the Electron Microscopy Laboratory, and the Institute of Ecology.

Field work may be done at the university marine laboratory at Sapelo or Skidaway Island, Savannah River Ecology Laboratory, and several inland sites ranging from the coastal plains to the Blue Ridge mountains.

610. Biology of the Algae I. 5 hours. Three lectures and two 2-hour laboratory periods.
Prerequisite: BIO 101, 102 or BOT 121, 122.
Algal phylogeny, taxonomy, cytology, reproduction, and ecological relationships. Emphasis on the organismal biology of algae. Laboratories will concentrate on examination of living material and will include methods for the isolation and culture of algae.

612. Palynology. 5 hours. Three lectures and two laboratory periods. (Stanley)
Prerequisite: GLY 126, BOT 122, or approval of instructor.
The application of pollen and spore analysis to geological, botanical, ecological, aerobiological, archaeological studies with practical experience in extraction, identification and interpretation of pollen and spore diagrams.

613. Paleobotany. 5 hours. Three lectures and two laboratory periods. (Stanley)
Prerequisite: GLY 126, BOT 122 or approval of instructor.
Phylogeny and taxonomy of fossil plants with emphasis on their use in stratigraphic, paleoclimatic and paleoecological studies.

631. Morphology of the Vascular Plants. 5 hours. Three lectures and two 2-hour laboratory periods.
Prerequisite: BIO 101, 102 or BOT 121, 122.
A survey of the organographic diversity in vascular plants including principles of structural organization and major evolutionary trends. Course is strongly laboratory oriented with emphasis on first-hand examination of living material.

640. Cytology. 5 hours. Three lectures and two 2-hour laboratory periods.
Prerequisite: BCH 310 or permission of instructor.
The study of cells, their cytoplasm and nuclei. Emphasis in laboratories will be on localizing function on a structural background.

665. Plant Taxonomy. 5 hours. Three lectures and two 2-hour laboratory periods. Weekend field trips.
Prerequisite: BIO 101, 102 or BOT 121, 122. Credit not allowed for both 205 and 465/665.
History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies. (Spring quarter.)

671. Principles of Plant Systematics. 5 hours. Three lectures and two 2-hour laboratory periods. Weekend field trips.
Prerequisite: BIO 101, 102 or BOT 121, 122.
Principles of systematics, principles of nomenclature, concepts of rank and taxa, characterization and description, problem design, analytical procedures, data presentation, identification of special groups, classification, phylogenetic relationships, polymorphism, literature and bibliographic aids.

672. Variation and Evolution in Plants. 5 hours. Three lectures and two 2-hour laboratory periods.
Prerequisite: BIO 101, 102, or BOT 121, 122, a course in genetics or cytology would be useful but not required.
Processes and mechanisms of variation and evolution, genotypic and phenotypic patterns, chemosystematics, adaptation, breeding systems, polyploidy, hybridization, apomixis, polymorphisms, use of evolutionary data taxonomically, literature, experimental design, population sampling.

673. Taxonomy of Grasses, Sedges, and Rushes. 5 hours. Two lectures and three 2-hour laboratory periods.
Prerequisite: BOT 205, BOT 465 or permission of instructor.
Identification of grasses, sedges and rushes, systematics and economic importance of grasses, recognition of the economic importance of grasses of the Southeast.

675. Plant Population Ecology. 5 hours. Three lectures and 2–6 hours library-laboratory sessions. (Jones, Plummer)
Prerequisite: BIO 350, BOT 375 or permission of instructor.
Life histories: variability along environmental gradients, genecological characteristics, occurrences; germination, growth, reproduction; importance ecologically, economically, and in evolution.

676. Vegetation of North America. 5 hours. Six hours library-laboratory, three hours seminar and a weekend field trip. (Plummer)
Prerequisite: 15 hours credit in botany, geology, and geography, or agriculture including a course in ecology.
Theories of plant geography, climax formations, and the causes of contemporary vegetation. Includes floristics, indicator plants and problems in land utilization. Emphasizes eastern North America.

677. Community Ecology. 5 hours. Three lectures and two laboratory periods. (Monk)
Prerequisite: BIO 350 or permission of instructor
The study of community structure, classification, distribution and development. (Fall quarter.)

683. Plant Physiology. 5 hours. Three lectures and one 3-hour laboratory period. (Fisher)
Prerequisite: BIO 310 or equivalent.
Plant Physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development.

720. Local Flora for Teachers. 5 hours. Four 2-hour periods and weekend field trips.
Identification of vascular plants: native and nat-

uralized wild flowers, ferns, trees, and shrubs. Credit will not be given to Botany majors. (Spring quarter.)

722. Plant Ecology for Teachers. 5 hours. Three lecture-discussion periods, one 3-hour field trip or lab and two weekend field trips.
Prerequisite: Graduate standing in science education.
Comprehensive coverage of plant ecology at the individual, population and ecosystem levels with emphasis on experimental and field approaches.

758. Plant Microtechnique. 5 hours. Two lectures and three 2-hour laboratories.
The theory and practice of plant tissue fixation, dehydration, embedment, sectioning and staining. Several special techniques will also be covered, including modern histochemical localization procedures, microautoradiography, and the applications of various types of light microscope optics.

802. Introduction to Botanical Research. 1–5 hours. Three lectures and two library or laboratory periods.
Prerequisite: Consent of department head.
A course to acquaint the incoming student with the breadth of current botanical research and with the facilities available for botanical research.

804. Problems in Botany. 1–5 hours.
Prerequisite: Two senior division courses in botany, or approved courses in agriculture, geography, or forestry.
Special research projects under the direction of staff members.

821. (PAT) Biology of Ascomycetes. (Hanlin)

824. (PAT) Biochemical Techniques for Biologists. Laboratory only. (Kochert, Wynn)

832. (PAT) Biology of Phycomycetes. (Fuller, Porter)
Comparative morphology of biology and Phycomycetes and related groups. Discussion of the physiology of growth and development in these organisms is emphasized in the lectures. (Fall quarter of odd years.)

833. (PAT) Biology of Basidiomycetes. (Hanlin, Porter)
A study of the comparative morphology of the Basidiomycetes, principles of taxonomy, and training in identification. (Fall quarter of even years.)

855. (ZOO) Population Ecology. (Franz)

860. Aquatic Plants. 5 hours. Three 1-hour laboratory-discussion and two 2-hour lab periods or field trips. (Duncan)
Prerequisite: Any course dealing with identification of plants or animals and a course numbered above 300 in a plant or animal science.
A study of the identification, distribution, and ecology of aquatic plants.

862. Marine Botany. 5 hours. Three lectures and two 2-hour laboratory periods. (Darley, Dunn, Porter)
A study of the biology of algae, fungi and vascular plants of marine and estaurine environments including laboratory and field investigations of the cultivation, physiology and ecology of these plants. (Spring quarter of even years.)

864. Advanced Algology. 5 hours. Two lectures, two 3-hour laboratories, and outside library sessions.
Prerequisite: BOT 410/610.
The ultrastructure, genetics and development, nutrition, symbiotic associations, and physiological ecology of algae. The laboratory will concentrate on experimental physiology and field studies.

875. Autecology. 5 hours. Four hours library-laboratory, three hours lecture-seminar, weekend trip. (Plummer)
Prerequisite: A 300-level ecology course and permission of instructor.
Emphasizes impact of environmental factors on plants. Biotic responses are investigated relative to factor variability. Includes astrophysical variables, nuclear radiation, epidemics.

877. Pattern and Process in Terrestrial Ecosystems.
Prerequisite: BOT 477 or equivalent.
Advanced synthesis of Physiological, Population, Community and Ecosystem studies in the major terrestrial plant associations of North America.

880. Plant Systematics and Evolution Seminar. 2 hours. Max. 16 hours.
Seminar on current botanical research topics.

881. Lower Plants Seminar. 2 hours. Max. 16 hours.
Seminar on current botanical research topics.

882. Plant Physiology Seminar. 2 hours. Max. 16 hours.
Seminar on current botanical research topics.

884. Plant Ecology Seminar. 1–16 hours.
Seminar on current botanical research topics.

886. Plant Anatomy, Morphology, and Cytology Seminar. 1–16 hours.
Seminar on current botanical research topics.

887. Plant Metabolism and Translocation. 5 hours. Four hours lecture and one 3-hour laboratory. (Black, Fisher)

Prerequisite: BOT 483 or permission of instructor.
Photosynthesis, nitrogen metabolism, mineral metabolism, compartmentation, membrane transport, apoplastic and symplastic transport, and long-distance transport.

888. Developmental Physiology. (Key)
Prerequisite: BOT 483 or permission of instructor.
Biochemistry of plant hormones, levels of development, polarity (cellular and intercellular), photomorphogenesis, environmental responses, and wound responses.

889. Environmental Physiology. 5 hours. Four hours lecture and one 3-hour laboratory. (Dunn, Franz, Michel)
Prerequisite: BOT 483 or permission of instructor.
Energy balances, water relations, stomatal physiology, gas exchange, environmental aspects of mineral nutrition, stress physiology, and productivity.

892. (BCH) Nucleic Acids. (Champney, Rawson)

930. Thesis in Botany. 5–50 hours.

BUSINESS ADMINISTRATION

C. David Billings
(*R. Preston Brooks Business Administration Building, North Campus*)

The degrees offered through the College of Business Administration include the Master of Business Administration (MBA), the Master of Accountancy (MAcc), the Master of Arts in Economics (M.A.—Econ.), the Master of Arts in Business Administration (M.A.—B.A.), the Ph.D. in Business Administration, and the Ph.D. in Economics. Several students combine business and law in the MBA—JD program.

All students are expected to present substantial background in the "common body of knowledge" of business administration. If these courses were not completed in the baccalaureate program, the study may be accomplished in graduate courses following admission.

Details of the requirements for the Master of Accountancy (MACC) and Master of Business Administration (MBA) programs may be found on pages 31 and 32.

The Master of Arts degree is designed for students interested in graduate studies in a specialized area. M.A. majors are offered in Accounting, Banking and Finance, Economics, Risk Management and Insurance, Management, Management Sciences, Marketing, and Real Estate and Urban Development. The M.A. involves the completion of forty-five quarter hours of work. The student's major professor advises the student in the selection of eight courses and at least five hours of thesis. The student's major professor directs and approves the thesis.

The Ph.D. degree is offered in both business administration and economics. The program trains persons for teaching and research in business administration or economics in universities and colleges or for doing research in governmental and business organizations.

The doctoral program is individually planned for each student by the major professor and advisory committee. The Ph.D. in Business Administration involves developing competency in a major field of business, related field of business, a supporting discipline outside of business (such as economics, psychology, or sociology), a research methodology, and the completion of an acceptable dissertation based upon independent research. In addition, all students must have the knowledge of mathematics through differential and integral calculus. Programs leading to the Ph.D. in Business Administration are offered in:

Accounting
Business Finance
Management Policy and Systems
Management Sciences
Marketing
Organizational Behavior
Real Estate
Risk Management and Insurance

The Ph.D. in Economics is offered with emphasis on microeconomic theory, macroeconomic theory and two of the following fields:

Agricultural Economics
Business Conditions Analysis
Corporate Finance
Econometrics
Economic Development
Economic History
Industrial Organization
History of Economic Thought
International Economics
Labor and Manpower Economics
Managerial Economics
Monetary Economics
Public Finance

In addition, all students must have the knowledge of differential, integral, multivariable and introductory vector calculus.

ACCOUNTING (ACC)

714. Cost Accounting.
Prerequisite: ACC 353 or permission of department
Methods of ascertaining costs in manufacturing concerns emphasizing the utilization of the data in decisions.

715. Income Taxation.
Prerequisite: ACC 111 or ACC 113H or ACC 799F.
Federal income tax law applicable to individuals and corporations (excluding reorganizations).

716. Advanced Cost Accounting.
Prerequisite: ACC 514 or 714.
Emphasis on information systems, budgeting, cost-volume-profit analysis, and cost standards and variance analysis. Cost data are developed and fitted into various mathematical models including statistical analysis, linear algebra, and linear programming.

718. Governmental Accounting.
Prerequisite: ACC 354.
Accounting problems and procedures pertaining to state and local governments and their institutions; governmental classification of receipts and expenditures; preparation of reports; budgeting and fund accounting.

719. Advanced Income Taxation.
Prerequisite: ACC 515 or 715.
Continuation of Accounting 715 including partnerships, social security, estate and trust income taxes, estate tax, gift tax, and corporate reorganizations.

721. (MAN) Introduction to Programming Systems.
Prerequisite: Accounting 316 or equivalent.
To develop an understanding of and an appreciation for financial information systems, with emphasis on electronic data processing.

756. Accounting Problems.
Prerequisite: ACC 354.
Application of accounting theory to specialized accounting problems including partnership accounting, branch accounting, consolidated statements, installment sales, consignments, and governmental accounting.

772. Auditing Principles.
Prerequisite: ACC 514 or 714.
The study of the principles governing audits and audit procedure. The qualifications and responsibilities of the public accountant.

776. Business Law II.
Prerequisite: ACC 370.
Business organizations, agency, insurance, property, estates and trusts, bankruptcy, bailments, secured transactions, suretyship.

779. Function of the Controller.
Prerequisite: ACC 514 or 714; or 355 and consent of instructor.
Principles and functions of the controller and his office; allocation of responsibilities; forecasting; budget preparation; analysis of cost variances; and probability and linear programming applications.

798F. Legal and Social Environment of Business. 3 hours.
A foundational approach to the interrelationship of law, society and business. The study of established socio-legal concepts and the investigation of the development of the rule of law in society and society under the law. Particular emphasis is placed on cases and writings involving plural concepts or categories of study.

799F. Principles of Accounting. 3 hours.
An introduction to the collection of business data, to the preparation and interpretation of financial statements, and to the limitations inherent in them.

815. Tax Implications in Management Decisions.
Prerequisite: ACC 799F. Not open to Master of Accountancy students.
Furnish the potential manager with an understanding of selected provisions of federal income and estate taxation relevant in making business decisions.

852. Development of Accounting Theory.
A historical perspective of the development of accounting theory. The underlying foundations of accounting standards as they are applied in income determination and asset valuation are examined. Emphasis is placed on early writings in the accounting theory.

854. Contemporary Accounting Theory.
An evaluation of the objectives and standards of financial reporting as they are applied in contemporary income determination and asset valuation. Special attention is given to accounting standards as evidenced by pronouncements of professional and other organizations.

855. Accounting and Information Systems.
Prerequisite: ACC 111 or equivalent.
A graduate course for non-accounting majors which deals with the development and uses of accounting. Includes (1) the development of accounting principles, (2) financial statement analysis and interpretation, and (3) the uses of accounting data by management in planning, budgeting, and forecasting.

856. Advanced Cost and Controllership.
Prerequisite: ACC 514 or 714.
Development and use of cost accounting data in nformation systems designed for planning, coordinating, and controlling production and distribution efforts. Includes (1) cost systems, (2) selected quantitative techniques, and (3) technical report preparation.

857. Advanced Auditing.
Prerequisite: ACC 572 or 772.
A study of conceptual foundations of auditing, he structure of the profession, the impact of governmental agencies on auditing and current nd emerging problems in auditing.

58. Advanced Accounting Problems.
rerequisite: ACC 556 or 756.
A study of complex financial accounting probems beyond the undergraduate financial accounting. The course will include such topics as EC accounting, advanced consolidation isues, lease accounting, estate and trust accounting, joint ventures, and other current financial accounting topics.

859. Tax Planning and Research.
Prerequisite: ACC 515 or 715.
Selected sections of the Internal Revenue code, primarily dealing with corporations, are used to emphasize tax planning and research. Limited treatment of estate planning is given.

860. Income Taxation of Corporations and Their Shareholders.
Prerequisite: ACC 859 or permission of instructor.
A detailed study of tax problems of corporations and their shareholders.

861. Seminar in Selected Topics in Taxation.
Prerequisite: ACC 859 or permission of instructor.
Topics for course selected by instructor; possible topics include partnerships, sub-chapter S corporations, state and local taxation, social security, unemployment taxes, exempt organizations, and current developments in taxation.

862. Estate Tax and Gift Tax Planning Seminar.
Prerequisite: ACC 859.
This course should be taken last in the tax sequence. Emphasis on role of accountant in lifetime planning and administration of estates.

870. Social, Political and Legal Environment of Business.
Prerequisite: ACC 798F or equivalent.
A study of the law as it affects business, not as a substantive subject matter but as a model for rational decision making. Concentration upon skill development evaluation of opposing views and alternative solutions in all problem areas.

881. Accounting Systems.
Prerequisite: ACC 514 or 714.
Accounting systems used in various businesses; principles of internal control; organization and installation of an accounting system.

899. Directed Study in Accounting. 1–15 hours.
Prerequisite: Approval of department.
Directed study or research in the area of accounting.

900. Research Methods in Accounting.
Prerequisite: Doctoral students only.
This seminar is designed to assist the candidate in identifying, describing, and illustrating the various methodological approaches which are appropriate for research. Methodologies in accounting research will be examined. Applications of these methodologies will be examined by analysis and study of the contributions of major research efforts with the intent of understanding both the research approach and the results of the research.

930. Thesis in Accounting. 5–50 hours.

950. (MAN) Systems Analysis and Design.

951. (MAN) Managing Business Data Processing Systems.

BANKING AND FINANCE (FIN)

681. (ECN) International Finance: Theory and Policy.

687. (AEC/MKT) Commodity Markets.

733. Credit Management.
Prerequisite: FIN 330 or 799F.
An analysis of the principles underlying the extension of credit to finance the transfer of goods and services.

799F. Financial Problems Analysis. 3 hours.
An accelerated introduction to financial statement analysis, financial planning and capital budgeting for MBA students.

800. Corporate Financial Policy. (Dince, Fortson, Hanna, Hilliard, Lloyd)
Prerequisite: FIN 330 or 799F.
Analysis of financial problems and policies of corporations.

801. Investments. (Hanna)
Prerequisite: FIN 330 or equivalent.
Elements of an "ideal" investment; examinations and testing of specific investment securities.

802. Investment Management. (Dince, Hilliard, Lloyd)
Prerequisite: FIN 330 or equivalent.
Considers alternative basic approaches to management of common stock and fixed-income security portfolios. Extensive use is made of investment management cases in specific areas. These include personal trusts, pension funds, endowment funds, insurance companies, and individual accounts. Problems and readings are also assigned.

803. Security Analysis. (Hanna)
Prerequisite: FIN 330 or equivalent.
The tools of security analysis are developed and applied to improve critical judgement in the appraisal and selections of securities.

804. (ECN) Public Finance. (Billings, Clement, Legler)
A general consideration of American public expenditures, revenues, and fiscal administration.

808. Management of Financial Institutions. (Sinkey, Verbrugge)
Prerequisite: FIN 800 or equivalent.
Analysis of the financial management problems of financial institutions. Special attention will be devoted to commercial banks, savings institutions, and pension funds.

809. Financial Planning and Control. (Fortson, Hilliard)
Prerequisite: FIN 430, or equivalent, or permission of instructor.
A survey of theory, and procedures involved in the development and operation of financial plans and financial control to aid in the administration of commercial and industrial enterprises. The emphasis is on quantitative methods in finance.

811. Commercial Banking. (Masten, Selby, Sinkey)
Prerequisite: FIN 326.
Theory of commercial banking and its effect on the supply of money and national income: the concept of bank asset management; the relationship of asset management to liquidity; commercial banking and the nation's credit structure.

812. The American Financial System. (Selby, Sinkey, Verbrugge)
Prerequisite: FIN 326.
The function, role and management of the major types of financial institutions in the United States. Particular attention is paid to the flow of funds through the specialized financial market sectors.

813. (ECN) State and Local Public Finance. (Clement)
Revenues, expenditures, and fiscal administration of Georgia and its political subdivisions, fiscal comparisons of Georgia with other states; and an analysis of intergovernmental tax relationships.

815. (ECN, POL, RE) Metropolitan Fiscal Problems. (Billings)
Prerequisite: Permission of instructor.
An examination of public economy of metropolitan areas and an intensive study of selected special metropolitan fiscal problems in the areas of public expenditures, revenues and fiscal administration.

819. (ECN) National Income Accounting.
Prerequisite: FIN 326.
Concepts, statistical sources, and uses of the national income and wealth accounts; relationships to input-output and money flow analysis.

820. (ECN) Monetary Policy. (Timberlake. Verbrugge)
Prerequisite: FIN 326.
Monetary theory and how it affects monetary policy: objectives; techniques, and problems involved: treasury fiscal and debit management

policy as they affect and are affected by Federal Reserve policy.

830. Business Financial Policy.
Prerequisite: Graduate only.
The social and economic consequence of business financial policies. Projections of aggregate sources and uses of business funds, dividend policy, and possible financing gaps, business and social aspects of mergers and reorganization.

831. Investment Analysis. (Hanna)
Prerequisite: Graduate only or permission of instructor.
The theory of the determination of investment values. Advanced studies of the theory of investment risk, institutional market factors, S.E.C. regulations, and economic environment.

834. (ECN) Seminar in Fiscal Policy. (Billings, Clement, Legler)
Prerequisite: FIN 434.
The stabilization function of government with emphasis on fiscal policy; opposing viewpoints as to the purpose, scope, and effectivness of fiscal policy; the latent budget surplus concept and tax changes.

835. (ECN) The Theory of Public Finance.
Prerequisite: FIN 434.
Study of the shifting, incidence and impact of various types of taxes and the total economic impact of a system of taxes and of a given volume and description of government expenditures.

837. (POL) Quantitative Analysis for Public Decision Making. (Billings)
Prerequisite: MAT 204 or equivalent.
A tool course for public administration. The course involves an introduction to quantitative analysis and techniques used in planning programming budgeting systems.

838. (ECN) The Demand and Supply of Public Goods (Allsbrook)

850. (ECN) Monetary and Banking Theory. (Timberlake)
Prerequisite: FIN 326 and 450.
The development of monetary and banking theories in economic thought from David Hume to the present. Emphasis is on the implications of monetary theories as they are reflected in various demands for money.

851. The Money Market. (Masten, Verbrugge)
A study of the flow of funds, credit instruments, role of financial institutions, and the structure of interest rates.

853. (ECN) Development of Monetary Institutions. (Timberlake)
Prerequisite: FIN 850.
A history of the development of monetary institutions from medieval period to the present. Particular attention is paid to the development of banking and central banking in Europe and their effect on the development of American monetary institutions. The Federal Reserve System is treated as an extension of the logical development of central banking in the United States and Europe.

881. (ECN) Seminar International Finance.
World monetary system, international money and capital markets, financing for multinational business.

899. Research Problems in Finance.
An examination of the most recent professional contributions in the various special fields of finance. Student and instructor interests determine which particular field is brought under scrutiny.

930. Thesis. 5–50 hours.

951. Financial Problems Analysis.
Prerequisite: Master's degree or equivalent.
A study of the various methods employed in particular fields of financial analysis, together with their methodological implications and efficiency in getting results.

955. Research Problems in Public Finance.
An examination of the most recent professional contributions in public finance. Student and instructor interests determine which particular field is brought into scrutiny.

995. (RE) Mortgage Market Analysis (Haney)

ECONOMICS (ECN)

601. The Economics of Poverty. (Rubin)
(Non-credit for economics majors.) An economic analysis of the causes of poverty; the amount of poverty in contemporary U.S. society; spending patterns of the poor; the effects of discrimination; the economics of the welfare system; the negative income tax and other proposed remedies for poverty.

647. Private Enterprise and Public Policy.
Factors determining the structure of particular industries; pricing behavior of industries as a function of structure, with particular reference to oligopoloy theory; dynamic aspects of industry structure; effects of market structure on such variables as product differentiation and research and development; welfare and policy implications of industrial structure.

648. Public Utilities, Public Regulation and Public Enterprise.
The functioning of the market economy; imperfections leading to government interventions: externalities, natural monopolies, and failure of property right definitions. Examines possible governmental policies, including regulation, to counter such imperfections.

649. Government and Business.
Economic bases and guidelines for government intervention; the policy of maintaining competition; role of antitrust policy in a private enterprise economy; character and limitations of the law; the law emerges, 1890–1911; anti-trust law and restrictive agreements; the law and monopoly; the regulation of competitive practice; appraisal of anti-trust.

681. (FIN) International Finance: Theory and Policy.
Prerequisite: FIN 326.
Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy.

689. The Labor Movement. (Beadles)
Historical background of modern industrial relations; economic, social and political forces contributing to the current problems in labor economics.

690. (MAN) Labor Legislation. (Beadles)
Prerequisite: ECN 386.
An economic analysis of the problems and issues arising out of the legislative and judicial efforts to define the rights, duties and responsibilities of labor organizations and management in the field of industrial relations.

693. Industrial Relations Systems. (Beadles)
Prerequisite: ECN 386.
The study of the growth, development, and economic import of labor movements in selected countries. Executive decision-making in various types of markets; demand, price, and output analysis utilizing micro- and macroeconomic tools; public policy.

694. Labor Market Analysis.
Prerequisite: ECN 386.
A presentation of current theories, recent empirical investigations, and historical and current data source materials in the area of labor supply at the local, state, regional, and national levels. The course will focus upon 1) evaluation of the quality and quantity of the labor resource available to a labor market, 2) application of labor market data by firms and government agencies and 3) the role of the labor resource in explaining the South's regional position in the national economic setting.

695. Economics of Population. (Miller)
Economic and social results from population change, particularly with respect to economic opportunities, employment investment, international trade, and economic development; explanation and forecasting of population trends.

696. (MAN) Managerial Economics. (Green)
Problems in business and economics; application of economics, theory and tools of marginal analysis to managerial decision making. A case approach using an interdisciplinary framework of theoretical models in business analysis.

697. Economic Evolution of the United States.
Prerequisite: ECN 133 or permission of the instructor.
A survey of the important findings of the new economic history. The growth of the American economy is traced from colonial times to the present. Topics discussed include slavery, post-Civil War South, railroads, and the Great Depression. Special emphasis is placed on the application of economic theory to problems in history.

745. Contemporary Economics for Non-Majors I.
Prerequisite: Graduate standing.
Employment theory. Emphasis is placed upon recent development and varying points of view in contemporary economics. May not be counted as part of a degree program in economics or business administration.

746. Contempoary Economics for Non-Majors II.
Prerequisite: Graduate standing and ECN 745.
Price theory. Emphasis is placed on recent developments and varying points of view in contemporary economics. May not be counted as part of a degree program in economics or business administration.

797F. Fundamentals of Economic Analysis.
This course will survey the fundamental concepts involved in business and industrial analysis and policy, with emphasis on alternative market structures, from both the supply and demand sides. Special emphasis is given to pure competition, monopoly, oligopoly, national income analysis, consumption, saving, investment, inflation and growth.

800. Micro-Economics Theory.
Economic theory of households and firms. Determination of equilibrium product and factor prices, allocation of resources and distribution of income.

801. Macro-Economics Theory. (Allsbrook)
National income theory and policy. Determination of income, employment, prices and interest rates.

803. Economic Growth and Development
Prerequisite: Two senior division courses in economics.
Study of the problems and methods of achieving a more rapid rate of economic and social development. Specific problems in the area of population, resource endowment, entrepreneurship, and physical and human capital are considered. Strategies and methods of measuring and implementing changes to achieve "desired" objectives are stressed.

804. (FIN) Public Finance. (Billings, Clement, Legler)

805. Advanced Economic Theory I.
Prerequisite: Graduate standing, plus core courses in economics.
An analysis of selected problems in microeconomic theory.

806. Advanced Economic Theory II.
Prerequisite: Graduate standing, plus advanced Economic Theory I.
An analysis of selected problems in macroeconomic theory.

807–808. The History of Economic Thought I, II. 5 hours each. (Miller)
Prerequisite: Permission of the instructor.
A review of the history of economic theory. The evolution of the important principles of economics.

809. Advanced Economic Theory III.
Prerequisite: Advanced training in economic theory and consent of instructor.
An application of the concepts of macro- and micro-economic theory to a world of disturbance, change, and growth. Attention is given to the micro-economic foundations of employment and inflation under conditions of equilibrium and disequilibrium.

810. Research in Economic Growth I.
Prerequisite: ECN 803 and permission of instructor.
Verbal and mathematical formulation of the classical to the most recent theories of economic growth. Aggregate and sectoral models with emphasis on econometric application will be stressed.

811. Research in Economic Growth II.
Prerequisite: ECN 810 and permission of instructor.
Reading and research in special problems of economic growth in specific areas of the world. A continuation of Economics 810.

813. (FIN) State and Local Public Finance. (Clement)

815. (FIN, POL, RE) Metropolitan Fiscal Problems. (Billings)

819. (FIN) National Income Accounting.

820. (FIN) Monetary Policy. (Timberlake, Verbrugge)

825. Collective Bargaining.
Prerequisite: Graduate standing.
The collective bargaining process with special reference to its economic implications.

831. Business Fluctuations. (Green)
Prerequisite: MS 312.
Economic and social significance of business fluctuations; causes; methods and theories of forecasting; measures for controlling cycles.

832. Comparative Economic Systems.
Analysis and appraisal of the theories underlying economic systems; proposed and existing schemes with respect to the maintenance of full employment; distribution of income, and encouragement of progress.

833. Seminar in Modern Political Economy. (Green)
An analysis of the changing nature of the functioning, the relationships, and the structure of economic institutions in a dynamic political economy.

834. (FIN) Seminar in Fiscal Policy. (Billings, Clement, Legler)

835. (FIN) The theory of Public Finance.

836. Seminar in Business Conditions Analysis. (Green)
Prerequisite: ECN 436 and consent of instructor.
Study of recent developments and research in economic theory and techniques as they relate to business conditions analysis. Economic growth, short-run disturbances, adjustment processes, and questions of welfare and public policy all are viewed within the framework of a general equilibrium system.

838. (FIN) The Demand and Supply of Public Goods. (Allsbrook)
Prerequisite: ECN 805.
A study of the theories of the allocation of resources to the production of public goods in the public sector and of the relationship between public and private goods.

840C. Seminar in Government and Business.
Current issues in the field of government relations to business and particular emphasis on problems associated with monopoly and competition.

850. (FIN) Monetary and Banking Theory.

853. (FIN) Development of Monetary Institutions.

869. Mathematical Analysis for Economics.
Prerequisite: Consent of instructor.

Selected topics from differential and integral calculus of multiargument functions. Also included are those techniques of differential and difference equations required in dynamic economic models.

870. Mathematical Economics I.
Application of mathematical methods to economic theory and problems including joint supply and demand relationship, general equilibrium, cost curves and production functions.

871. Mathematical Economics II.
Application of mathematical techniques to selected topics in micro- and macro-economics, including measuring and testing hypotheses and the construction of economic models.

879. International Trade: Theory and Policy.
Theoretical analysis, historical survey and current problems of international trade; an examination of international economic policies and institutions especially as they relate to national political and economic objectives; trade barriers and controls.

880. Seminar in International Trade.
Prerequisite: ECN 879, 681, or equivalent and permission of instructor.
Advanced international trade and payments theory and the application of concepts to current problems. Special attention will be given to problems of adjustment to changing patterns of international trade and payments.

881. (FIN) Seminar International Finance.

885. Foreign Labor Movements. (Beadles)
Factors explaining the growth and development of trade unions in different national settings; the role of unions in economic growth; differences among countries in the operation of labor markets; wage and income policies of different countries.

886. Wage Theory.
Historical perspective and current status of wage theory; the determinants of relative wage relationships; the impact of trade unions on wages; determinants of the general wage level; labor's share of national income.

887. Manpower Economics.
A course in the economics of labor supply. Consideration of the definition, structure, and operation of labor markets; labor supply measurement; the economics of labor force participation and hours of work; the economics of labor mobility; labor supply projections; manpower policy.

891. Research in Applied Economic Statistics.
Prerequisite: Permission of the instructor.
Individual research in the application of statistical methods to economic problems.

893. Economics Seminar.
Prerequisite: Permission of the instructor.
A research problem in the field of major concentration under personal supervision of the major professor.

894. Seminar in Economic History.
Prerequisite: Permission of instructor.
A seminar on selected topics in economic history. Special emphasis is placed on issues of current interest to economic historians. Included will be discussion of railroads, slavery, post-Civil War South, and the Great Depression.

895. Applied Economic Statistics. (Hill)
Prerequisite: MS 312.
Sample design, applications of sampling theory and significance testing in economics and business, elementary analysis of variance, and multiple regression and correlations.

896. Quantitative Analysis for Economics. (Sushka)
Prerequisite: MS 312.
The general linear correlation model is developed and the inferences that can be drawn from the model are discussed.

897. Advanced Econometrics.
Topics in the theory of econometrics including errors in variables, autocorrelation, multicollinearity, heteroscedasticity, and simultaneous—equations bias for various estimating methods.

899. Economics Seminar. 1–15 hours.

900. Business Economics.
Prerequisite: Graduate standing and ECN 797F or equivalent.
Economic analysis of the environment of business with emphasis on methods of business decision-making. Determinants of growth, problems in fluctuations, interdependence among sectors and management implications are considered.

930. Thesis. 5–50 hours.

941. Business in Dynamic Economy. (Green)
Prerequisite: Graduate standing in business administration and background of core courses in economics and business administration.
Economic analysis of the environment of the business firm with emphasis on the development of methods for relating to all the factors involved in making business decisions and for understanding the economics of the firm. The determinants of economic growth, the problems of economic fluctuations, the interrelations among economic sectors, and their implications for business management.

MANAGEMENT (MAN)

656. (SPC) Group Discussion and Conference Leadership.

667. (SPC) Interviewing.

690. (ECN) Labor Legislation. (Beadles)

691. (ECN) Collective Bargaining.

696. (ECN) Managerial Economics. (Green)

721. (ACC) Introduction to Programming Systems.

740. Business and Society.
A study of the major facets of the American business system in their historical and social background; growth of corporate capitalism and industrial state and business institutions in their interaction with cultural and social environment.

752. International Business Policy.
Examination of some of the major problems that confront a manager who operates across international boundaries from a base in a single country, or who maintains affiliates and subsidiaries in several national jurisdictions, the greater emphasis being on problems involved in the crossing of national boundaries.

782. (PSY) Personnel Measurement.
A study of quantitative methods and research models applicable to the measurements of personnel and their work behavior in organizations. Emphasis will be on the use of research methods and results to cope with personnel problems in organizations.

786. (PSY) Wage and Salary Administration.
A study of job evaluation and other procedures that lead to the development of a sound wage and salary structure; problems of administration, executive compensation, and financial incentives.

788. (PSY) Personnel Selection and Placement.
Prerequisite: MAN 582/782.
A study of methods applicable to the development and valid standards of personnel selection and placement with the use of psychological tests, the personal interview, and other kinds of personal data.

792. Problems in Human Resource Utilization.
A treatment of selected areas of current concern regarding the utilization of human resources.

795. Administrative Practices.
A study of concepts and research findings pertaining to individual and group behavior in organizations; nature and crucial importance of communications, employee motivations and group dynamics; development of greater effectiveness in organizations through a better understanding of managerial philosophies, procedures and techniques.

798F. Production/Operations Management. 3 hours.
Prerequisite: MS 789F or equivalent.
The major thrust of this course is the application of mathematical, statistical and computer science techniques to operations problems. The applications are largely applicable to the production environment but not exclusively so. Topics include mathematical programming, optimization models, Monte Carlo methods, control charts and network analysis.

799F. Management and Organizational Behavior. 3 hours.
Analysis of management functions and processes as applied to organizations, includes fundamentals of line and staff, management principles and techniques and their applications. Study of human behavior in organizations and the administration of organizational behavior conflicts. Particular attention will be given to the interactions of motivation, authority dynamics, and organization structure with human behavior and to the consequent effect on organizational efficiency.

856. (SPC) Group Discussion.
Intensive examination of research in small group communications with major emphasis of those variables which exert greatest influence. Course includes consideration of recent research findings as well as those studies recognized as central to the area of investigation.

896. (SPC) Seminar in Communication and Conflict.

899. Directed Study in Management. 1–15 hours.
Prerequisite: Permission of department.
Directed study in management will involve the preparation of research papers giving particular attention to specialized problems in any field of management.

900. Seminar in Organizational Behavior.
Prerequisite: MAN 799F or equivalent.
Critical analyses of research and theory on complex organizational behavior. Theory building in both structure and process.

902. Seminar in Personnel Research.
An intensive review and critique of published research in the personnel area. Particular attention will be paid to the adequacy of research design and procedures.

903. Problems in Personnel Research.
Supervised research directed toward the study

of selected problems. Emphasis will be placed on developing the skills needed to carry out a research project and to present the study in appropriate written form.

904. Seminar in Management Development.
A study of actors influencing the development of individuals within formal organizations. Emphasis will be on professional and managerial personnel.

905. The Systems Approach.
The systems approach is primarily a way of thinking. It is a viewpoint that conceptualizes institutions as organized complexities, i.e., as organic (open) systems. The interdisciplinary character of the systems approach is exemplified by the development of general systems theory and cybernetics. This course relates the theories and findings of such interdisciplinary research to the study of human organizations.

906. Decision Theory.
Examination of the philosophical and scientific bases of decision-making processes especially in their qualitative dimensions. Related psychological, organizational, and small-group constructs are analyzed.

907. Production/Operations Management.
Prerequisite: MS 800.
A comprehensive coverage of principles and practices relating to production/operations management. The coverage will be broad and will include both line and staff functions. Topics include capital investment analysis, mathematical programming applications, work measurement, project scheduling, inventory models, etc.

908. Seminar in Human Relations.
A historical analysis of the basic concept of the "division of labor". Discussion of various techniques of job analysis and performance assessment. Examination of current attitudes and values toward the work ethic, focusing on recent attempts at "job enlargement" and "work enrichment".

909. Field-Research in Organizational Behavior.
Critical examination of field research in organizational behavior. Review of research methodologies. Design, conduct, and report of an on-site research project within an organization. Recommended preparation: Management 900 or equivalent.

910. Contemporary Management Problems.
1–15 hours.
Prerequisite: Permission of department.
An intensive examination of a limited number of key problems in current management practice and applications—together with a study of research techniques and models for probing them more deeply.

911. Modern Management Theory.
Prerequisite: Master's degree or equivalent.
In-depth study of emerging concepts and theories in management and administration. Each development is traced historically and placed in its cultural environment.

930. Thesis. 5–50 hours.

931. Computer Simulation in Business.
Prerequisite: QM 900.

940. Business and Society.
Provides an opportunity for examining the broad spectrum of the interrelationships between business and society and their changing pattern. The broad objective is to help the student to relate business to its external culture, the social system, and its total environment; and also to develop an understanding of the role of management as the linking mechanism between the business organization and the social environment. Representative issues: corporate power and responsibility, social policy of management, social auditing, managerial ethics, business and government balance.

941. Managerial Uses of the Computer.
An introduction to managerial uses and implications of the computer. Topics include the computer and society, routine data processing applications, computer assisted decision making applications, the manager and information systems, the computer's impact upon management and the organization, and computer planning, selection and implementation.

945. Conceptual Foundations of Business.
Examination of the intellectual, cultural, and legal concepts underlying the business system. Relationships of business system to modern industrial society.

950. (ACC) System Analysis and Design.
Introduction to phases in the development of computerbased management information systems. Feasibility studies, principles of analysis and design, tools and equipment used by designers, factors associated with successful systems. Phases in development of large-scale man-machine systems.

951. (ACC) Managing Business Data Processing Systems.
Applications of management information systems for operations, management control, and stragegic planning. Utilization of management information systems serve various functions in a business, and to serve managers at various levels of organization.

952. International Business Strategy.
Focuses upon the formulation and implementation of integrated corporate strategy by multinational business organizations. Examines diverse aspects of the planning, direction and control of the many flows (products, technology, capital, personnel, and funds) linking the multinational company to its affiliates while operating within a plurality of political, economic, and sociocultural systems.

953. Business Policy Formulation and Administration.
Prerequisite: MBA standing and courses in finance, marketing, and production/operations management.
The final integrating course for the analytical application of business functions and administration skills. To develop analytical skills and attitudes of top management in administering the company as a whole, and the interrelationships of all problems in the organization. Setting strategic objectives, analysis of changing environments, developing corporate strategies, formulating business policies, and analysis of problems in management functions terms in addition to other analyses in the organization.

954. Small Business Management.
This course is intended to familiarize the student with the role of small business ownership in an economic environment. Special consideration will be given small business enterprise management in its effort for survival and growth, with consideration given to research and development, marketing, finance, and acquisitions and mergers.

962. Research in Administration.
A study of research methodology, with major emphasis on the function and design of administrative research, techniques of data-gathering and data analysis as well as reporting and utilization of findings. There will be extensive use of existing business research reports.

975. Management of Business Research Programs.
Provides insights, concepts, and practice to improve understanding of business research programs. Consideration of the elements and problems of business research which make management of research different from management in other fields. Particular attention will be paid to the fomenting of creativity and innovation in business research. There will be case studies and field trips.

983. Advanced Personnel Measurement.
Prerequisite: Management 903.
The application of advanced statistical procedures and experimental design to the study of individual and group behavior. The context of the business organization will be emphasized.

985. Personnel Administration.
In depth study of selected topics of personnel programs. Emphasis is given to the development and evaluation of these programs within organizations.

989. Management of Human Resources.
A review of federal regulation of human resource management in areas such as equal employment, occupational safety and health, and employee retirement plans.

994. Manpower Planning and Utilization.
This course offers an intensive study of manpower planning and development at the firm level. Areas of concern include the influence of governmental action, societal change and technological growth, both at the level of the firm and the nation. Students analyze existing manpower planning and development systems, and design or redesign them to better meet current organizational and societal demands.

996. (SPC) Seminar in Organizational Communication.
Critical evaluation of research in organizational communication with emphasis on its applicability to the work environment. The relationship between communication and the other managerial processes will be investigated and means of maximizing the processes considered.

997. Organizational Theory.
An elaboration of recent literature in organization theory and behavior with an emphasis on empiricism and methodology and their relationship with theory.

998. Problems in Personnel Research.
Prerequisite: MAN 903.
A study of methods appropriate to applied personnel research, with particular emphasis on the problems associated with longitudinal research.

999. Business Policy.
Prerequisite: M.B.A. standing and at least one course from each of the major functional areas.
A course dealing with corporate planning, and the critically important role of top management in assuring its success; basic tools and methods in making planning decisions; conceptual and operational models of comprehensive corporate planning, including planning in major functional areas; process, development, and structure of such planning; translating objectives and strategies into current operational plans.

MANAGEMENT SCIENCES (MS)

This is the quantitative program with the College of Business Administration that was previously taught under the Quantitative Methods heading. The program has been expanded to include a wider course offering than previously available under QM. The program is housed under the Risk Management, Insurance and Management Sciences Department.

With the exception of one split level course (MS 532–732) all courses are restricted to graduate students. The courses are essentially organized into four basic disciplines: deterministic models, simulation, stochastic models, and applied statistics.

732. Business Forecasting Methods.
Prerequisite: MS 312 or equivalent.
Introduction to forecasting techniques commonly used in business. Emphasis is on application and implementation through revelant projects.

798F. Foundations in Management Sciences.
Prerequisite: MAT 204
To provide the student with the basic mathematical, statistical, and computer skills required in business. The course seeks to develop the basic fundamentals in the three areas.

800. Survey of Operations Research.
Prerequisite: MS 798F or equivalent.
A survey of operations research techniques and their application to operational problems.

805. Business Simulation Models.
Prerequisite: MS 800 or equivalent.
An examination of the construction and use of simulation models in business; random number and process generators; construction of simulation models; validation; implementation; introduction to special purpose simulation languages; research projects.

812. Applied Statistical Methods.
Prerequisite: MS 312 or equivalent.
Statistical analysis as applied to business. Statistical inferences about population means and variances; inferences from categorical data; nonparametric methods; analysis of variance; applications to problems in business.

815. Deterministic Models.
Prerequisite: MS 800 or equivalent.
A study of deterministic mathematical programming techniques employed in operations research. Emphasis is on non-linear and dynamic programming techniques, such as classical optimization, gradient methods, quadratic programming, forward and backward algorithms.

817. Stochastic Models.
Prerequisite: MS 800 or equivalent.
An examination of probabilistic models useful in business; birth and death models; queuing models; Markov models; inventory models; chance-constrained models; and stochastic programming.

899. Directed Study in Management Sciences.
5–15 hours.
Designed to permit the student to perform independent directed study and research. To offer a student the opportunity to study and research subject matter in management sciences not offered as complete subject matter in another course.

905. Advanced Business Simulation Models.
Prerequisite: MS 805.
Advanced topics in applying simulation to business problems; design of simulation experiments; special purpose simulation languages and their uses in business; research projects.

915. Advanced Deterministic Models.
Prerequisite: MS 815.
A study of advanced deterministic mathematical programming techniques. Emphasis is on integer programming, network optimization, and other related techniques, such as branch and bound algorithms and Gomory's cutting plane method.

917. Advanced Stochastic Models.
Prerequisite: MS 817 or consent of instructor.
Advanced topics in stochastic models are considered, including autoregressive schemes, Box-Jenkins methodology, Brownian motion, renewal processes, stochastic optimization, and spectral analysis.

932. Decision Theory for Business.
Prerequisite: MS 812.
Decision-making under uncertainty and risk; utility theory; classical decision theory and its uses in business; risk functions and decision functions applied to business. The course also examines Bayesian decision theory and its uses in business; Bayes decision rules for discrete and continuous cases; value of information and its application to business.

MARKETING (MKT)

663. (GGY) Geography of Transportation.

687. (AEC/FIN) Commodity Markets.

761. (PSY) Behavioral Theory and Marketing.
Prerequisite: MKT 360; and open only to nonmarketing majors.

This course deals with the motives, attitudes and expectations of consumers and businessmen and contributes to an understanding of the marketing process.

768. Motor Transportation.
Prerequisite: Graduate standing.
Management of motor carrier enterprise both internally and within the society it serves. The functions of management are explored. The obligations toward shippers and relationships with other forms of transport are examined.

780. Current Transportation Problems.
Prerequisite: Graduate standing.
Consideration is given to all forms of transport with empahsis on functions performed, division of the market, technological changes, environmental factors, and governmental policy.

799F. Seminar in Marketing. 3 hours.
Prerequisite: Graduate standing.
A survey of marketing systems from both the macro and micro points of view. Examines marketing problems and functions.

855. Marketing Research.
Prerequisite: Graduate standing.
Study of the role of research in marketing decision-making; use of taxonomic procedures and the computer to delineate and evaluate markets; analysis and interpretation of research findings from a managerial perspective.

858. International Marketing.
Prerequisite: Graduate standing.
An analysis of planning, organization, and control aspects of multinational marketing operations and the effects of comparative economies, societies, and cultures on marketing opportunities.

859. Transporation.
Prerequisite: Graduate standing.
The various forms of transport are considered with special emphasis on their interrelationships. Problems of management are reviewed with consideration to economic, social and political objectives which enter managerial decisions.

860. Retail Management.
Prerequisite: Graduate standing.
A study of the basic concepts and analytical techniques of retailing management including demand analysis, spatial, merchandising and promotional planning and methods of organizational control.

861. Consumer Behavior.
Prerequisite: Open only to doctoral students in marketing and related fields.
The study of the shopping, purchasing and consumption behaviors of persons and groups of persons as they interact with marketing efforts and other sources of information.

863. Advertising.
Prerequisite: Graduate standing.
Reviews of the role of advertising in a free-enterprise society and examines the management of advertising activities in business organizations.

864. Sales Management.
Prerequisite: Graduate standing.
Study of field sales management with emphasis on the role of personal selling in the marketing mix, building an effective organization, and controlling and evaluating the sales force.

867. Marketing Promotion.
Prerequisite: Graduate standing.
Field research and analysis of current literature are combined for an advanced view of selling theory and practice. Personal selling, advertising and sales promotional activities are investigated from the viewpoint of promotional systems.

869. Physical Distribution.
Prerequisite: Graduate standing.
Examines the management of activities required to insure efficient physical supply of goods, emphasizing location decisions, inventory control, transportation management, logistics information and distribution service standards.

899. Directed Study in Marketing Policy. 1–5 hours.
Prerequisite: To be taken last quarter of masters program.
Students design and complete research projects or management audits in the area of marketing management under the supervision of a faculty member. Special assignments in simulations and business games may also be undertaken.

930. Thesis in Marketing. 5–50 hours.

950. Ethics in Business Practices.
Prerequisite: Graduate standing.
An analysis of the changing character of the relationships of business management to social groups, including the development of honesty and integrity as fundamental values of managerial development.

960. Marketing Analysis.
Prerequisite: MKT 799F or equivalent.
Analysis of the concepts involved in marketing management. Administrative problems are studied to develop managerial skills.

961. Marketing Theory.
Prerequisite: MKT 960 or three undergraduate courses in marketing.
An examination of the major concepts and theories that have been advanced to explain marketing practice.

962. Contemporary Marketing Problems.
Prerequisite: MKT 960 or three undergraduate courses in marketing.
An analysis of marketing problems of current interest to businessmen and academicians. Class members select individual topics for exploration, analysis and reports.

963. Quantitative Strategy in Marketing.
Prerequisite: MKT 960 or three undergraduate courses in marketing and permission of instructor.
A survey of mathematical models useful in decision-making in marketing. Emphasis on applications in product planning, physical distribution, promotion, and pricing.

964. Reading Seminar in Marketing.
Prerequisite: Graduate standing and permission of instructor.
A seminar designed to help students develop a sense of discrimination regarding the literature of marketing; to assist in an assessment of the contributions made by various writers; and to provide an opportunity to analyze, interpret, and discuss the fundamental concepts of marketing.

965. Marketing Research Methodology.
Prerequisite: MKT 960 or three undergraduate courses in marketing and permission of instructor.
Examines the philosophy, concepts and methods of marketing research design. Covers experimental methods, sampling procedures, measurement techniques, and other methodological problems in marketing research. The student is introduced to data reduction and statistical modeling programs.

REAL ESTATE (RE)

709. Income Property Valuation. (Shenkel)
Prerequisite: RE 390 and consent of instructor.
Art and process of real estate valuation. Problems, case studies, and field work applying cost, market, and income approaches to specific types of properties.

780. Problems in Real Estate.
Prerequisite: Graduate standing and permission of instructor.
The course concentrates on individual study projects utilizing advanced statistical and economic analysis in regional science and urban economics. The course is directed to making the maximum use of real estate resources.

800. Urban Land Development.
Prerequisite: Graduate standing and permission of instructor.
This course is recommended for non-real estate majors. The course content includes a study of location, real estate markets, and urban problems related to real estate finance, transportation, urban economics and housing.

815. (FIN/ECN/POL) Metropolital Fiscal Problems. (Billings)

893. Real Estate Investment and Taxation. (Wendt)
Prerequisite: Graduate standing and permission of instructor.
The theory, principles and techniques of real estate investment, emphasizing present value and cash-flow approaches to real estate investment decisions.

899. Directed Study in Real Estate. 1–15 hours.
Prerequisite: Graduate standing and permission of instructor.
This course concentrates on real estate as a major national resource and an article of commerce in policy determination and implementation of management decisions. The course includes a study of the integration of public and private policy constraints in the use of real estate resources.

930. Thesis. 5–50 hours.

990. Regional Science. (Floyd)
Prerequisite: Graduate standing and permission of instructor.
Measurement and analysis of regional economic activity. Evaluating regional economic development policies. Analysis of land use change and policies.

991. Housing Market Analysis. (Kau)
Prerequisite: Graduate standing and permission of instructor.
The housing problem and the role of the entrepreneur and government. The determination of national housing policies.

992. Urban Economics. (Kau)
Prerequisite: Graduate standing and permission of instructor.
Cost benefit analysis applied to redevelopment, public and private. The course deals with urban economics issues facing central space allocation.

994. Statistical Valuation Theories (Shenkel)
Prerequisite: Graduate standing and permission of instructor.
A review of the historical development and present trends in appraisal theory. The course emphasizes the application of statistical techniques and computer analysis in real estate valuation.

995. Mortgage Market Analysis. (Haney)
Prerequisite: Graduate standing and permission of instructor.

A study of the flow of funds into regional and instructional mortgage markets. Emphasis is placed on policies affecting mortgage and market imperfections.

RISK MANAGEMENT AND INSURANCE (INS)

702. Casualty Insurance Problems. (Trieschmann)
Prerequisite: INS 385.
Advanced study of all types of casualty insurance; automobile, professional liability, products liability and others, and how these relate to the risk-bearing function; legal and technical aspects of selection of risk, contract underwriting and loss adjustment.

703. Property Insurance Problems. (Trieschmann)
Prerequisite: INS 388.
Practical application of property insurance policies, including multiple-lines, to specific risk-bearing problems; legal and technical aspects of selection of risk, contract underwriting, and loss adjustment.

704. Life and Health Insurance Problems. (Johnson)
Prerequisite: INS 381 and 387.
An in-depth treatment of the various current problems confronting the life and health insurance industry; study concentrated in the legal, financial and social legislation currently facing the discipline.

705. Insurance Planning and Programming. (Johnson)
Prerequisite: INS 381 and 387.
Development of the human life values to include needs and their evaluation. A study of available assets, benefits, and tax effects. The scientific application of the above to create, conserve, and distribute an individual's estate.

706. Social Insurance. (Johnson)
Analysis of the major kinds of compulsory insurance and their interrelations; old-age and survivors' insurance; unemployment insurance, and compulsory.

707. Insurance Agency Management. (Leverette)
Prerequisite: INS 381, 385, and 388.
The economic functions performed by the general agency and its position in the insurance distribution system. Emphasis is given to the management aspects of agency operations from the sales, administrative and financial viewpoint.

711. Group Insurance and Pensions. (Johnson)
Prerequisite: INS 381.
A study of employee and/or employer oriented fringe benefit plans to include group or individual programs for life, health, pension, profit-sharing disability income, and special situations. Partial preparation for CLU exams.

713. Business Risk Management. (Leverett)
Prerequisite: 15 hours of insurance or permission of instructor.
An analysis of the risks faced by the business enterprise and the study of the various methods of handling these risks including loss prevention, risk retention, self-insurance, and corporate insurance programs.

899. Directed Study in Risk Management. 1–15 hours. (Greene)
A field study project in risk analysis and risk management and emphasis on the analysis of both pure and speculative risk in the enterprise and how risk affects business policy and the discharge of management function.

930. Thesis. 5–50 hours.

987. Insurance Seminar. 5–10 hours. (Leverett, Green)
Prerequisite: Graduate standing.
Designed for the non-insurance major to reach an understanding of the importance of risk in personal and business endeavors. The course is aimed at the intelligent handling of risk through insurance, self-insurance, retention, loss-prevention, and other methods of dealing with risk. A portion of the course is devoted to the analysis and solution of risk situations.

988. Insurance Seminar. 5–10 hours. (Leverett, Green)
Prerequisite: Graduate standing and permission of the instructor.
Intensive reading and discussion of selected subjects in life, property-liability insurance, risk management, and closely related fields.

990ABC. Contemporary Problems in Risk and Insurance. 3, 4, 5 hours respectively. (Greene)
Analysis of important current problems in insurance. Topics will vary each quarter but are expected to include developments in auto insurance, in national health insurance, in regulation of the industry, in the operations of insurance plans, and mergers and movements.

991ABC. Financial Analysis in Insurance. 3, 4, 5 hours respectively. (Greene)
Analytical study of insurance companies as financial institutions with emphasis on investment functions, underwriting requirements and reserves. Financial and accounting problems in

interpretation of insurer financial statements; use will be made of simulation and business games.

992ABC. Employee Benefits. 3, 4, 5 hours respectively (Greene)
A study of employee and/or employer oriented fringe benefit plans to include group life, group health, pension and retirement programs, private and public. Relationship of insurance to non-insurance benefits.

CHEMISTRY (CHM)

Richard K. Hill
(*Chemistry Building, South Campus*)

The Department of Chemistry offers courses of study and research leading to the Master of Science and Doctor of Philosophy degrees. The candidate for the Master of Science degree must complete a program of study approved by his major professor, the Head of the Chemistry Department, and the Dean of the Graduate School. He must demonstrate a reading knowledge of one approved foreign language and complete and defend a thesis based upon his research. This research should involve contributions of a publishable quality.

The Ph.D. applicant chooses a major concentration in analytical, inorganic, organic, or physical chemistry. A program of study including course work in the major and minor fields and the student's research objectives must be completed and approved by the major professor, the Head of the Chemistry Department and the Dean of the Graduate School. A reading knowledge of one foreign language selected from German, French, and Russian is required. After satisfactorily completing his prescribed course of study, the language examinations, and a comprehensive written and oral examination in his major field, the student is officially admitted to candidacy for the Ph.D. degree. This degree is awarded for proficiency and scholarship in research and a thorough acquaintance with a specific field of knowledge which the candidate demonstrates by the presentation and defense of a dissertation based upon independent work which contributes significantly to knowledge in the student's field.

Current research and teaching equipment includes a variety of ultraviolet, visible, infrared, far infrared, nuclear magnetic and electron spin resonance spectrometers (including the Beckman IR-11, DK-2A and DU; the Perkin-Elmer Models 621, 457, 257, and 202; the Cary Models 14, 15, and 60; the Varian A-60, HA-100, T-60, and V-4502-14; the Hitachi-Perkin-Elmer R-20 NMR unit with heteroprobe capability), the Hitachi-Perkin-Elmer RMU6D mass spectrometer and much more specialized equipment used in high pressure spectroscopy, calorimetry, light scattering studies, electrochemistry and radiation chemistry.

Unless otherwise specified, all laboratory periods are three hours.

600. History of Chemistry.
Prerequisite: 25 hours of chemistry.
The historical development of chemistry and its relation to other sciences.

601. Advanced Chemistry for Teachers.
Prerequisite: 30 hours of chemistry or consent of instructor. Special topics in chemistry of interest to the high school science and chemistry teacher. Open only to students in Education.

602. Introduction to Graduate Studies—Inorganic Chemistry. 3 hours.
Prerequisite: An undergraduate course in inorganic chemistry.
A concentrated study of those fundamental topics which form the basis upon which further work in inorganic chemistry is developed.

602L. Experimental Inorganic Chemistry. 2 hours.
Pre- or corequisite: CHM 426 or 602.
A laboratory course involving the synthesis and characterization by modern techniques of typical inorganic compounds.

603. Introduction to Graduate Studies—Organic Chemistry. 3 hours.
Prerequisite: An undergraduate course in organic chemistry.
Analogous to CHM 602 but dealing with fundamental topics in organic chemistry.

605. The Literature of Chemistry. 2 hours.
Prerequisite: 15 hours of chemistry.
An introduction to the literature of chemistry, research procedures, and directions which can be found only in original articles and sources.

608. Introduction to Graduate Studies—Analytical Chemistry. 3 hours.
Prerequisite: An undergraduate course in analytical chemistry.
Analogous to CHM 602 but dealing with fundamental topics in analytical chemistry.

609. Introduction to Graduate Studies—Physical Chemistry. 3 hours.
Prerequisite: An undergraduate course in physical chemistry.
Analogous to CHM 602 but dealing with fundamental topics in physical chemistry.

617. Principles of Molecular Spectroscopy. 3 hours. Max. 12 hours.
Prerequisite: CHM 491C or equivalent.

618. Methods of Molecular Spectroscopy. 2 hours. Max 8 hours.
Prerequisite: CHM 491C or equivalent.

621. Advanced Inorganic Chemistry.
Prerequisite: CHM 123 and one additional chemistry course with laboratory.
A study of the periodic classification of the elements.

626. Intermediate Inorganic Chemistry. 3 hours.
Prerequisite: CHM 491C or equivalent.

627. Intermediate Inorganic Chemistry. 3 hours.
Prerequisite: CHM 426.

630. Intermediate Organic Chemistry. 3 hours.
Prerequisite: CHM 442 and CHM 491C or consent of head of department.
A survey of synthetic methods widely used in organic syntheses.

631. Intermediate Organic Chemistry. 3 hours.
Prerequisite: CHM 430.
A survey of modern physical-organic chemistry with emphasis upon the interpretation of organic reactions.

632. Intermediate Organic Chemistry. 3 hours.
Prerequisite: CHM 431.
The determination and application of structural principles to organic compounds.

641. Organic Qualitative Analysis. 2 hours.
Prerequisite: CHM 340, 341.
Indentification of pure organic compounds and mixtures.

641L. Organic Qualitative Analysis Laboratory. 3 hours. Three laboratory periods.

644. Heterocycle Chemistry. 3 hours.
Prerequisite: CHM 341 or equivalent.
An introductory study of the structure, spectra, reactions and synthesis of heterocyclic compounds.

649. Introduction to Polymer Chemistry. 3 hours.
Prerequisite: CHM 241 or 341.
The physical and chemical properties of polymers as related to their structures.

691ABC. Physical Chemistry. 4 hours each.
Prerequisite: CHM 123, PCS 229, and MAT 255.

692. Chemical Thermodynamics. 3 hours
Prerequisite: CHM 491C.

693. Quantum Chemistry. 3 hours.
Prerequisite: CHM 491C.

694. Chemical Kinetics. 3 hours.
Prerequisite: CHM 491C.

695. Radiochemistry. 3 hours. (Johnston)
Prerequisite: CHM 491C.

696ABC. Experimental Physical Chemistry.
A—1 hour, B—2 hours, C—2 hours.
Pre- or corequisite: CHM 491ABC.
The treatment of experimental data, specialized techniques and selected laboratory experiments.

697. Introductory Statistical Thermodynamics. 3 hours.
Prerequisite: CHM 491C.

703. Chemistry for the Elementary School Teacher.
Prerequisite: Experience as elementary school teacher; open only to advanced students in elementary education without previous training in chemistry.
An introductory study of basic topics in chemistry specifically selected for application at the elementary school level.

780. Instrumental Methods of Analysis. 3 hours.
Prerequisite: CHM 341 and 381.
The use of optical and electronic instruments for analysis.

780L. Instrumental Methods of Analysis Laboratory. 2 hours. Two laboratory periods.

781. Chemical Instrumentation. 4 hours.
Prerequisite: CHM 491C or equivalent.

781L. Chemical Instrumentation Laboratory. 2 hours. Two laboratory periods.

785. Interpretive Spectroscopy. 3 hours.
Prerequisite: CHM 381, 342.
Fundamental emphasis will be placed on the principles and practice of interpretive spectroscopy. Spectroscopic methods such as IR, Raman, NMR ESCA and mass spectrometry pertinent to the identification and characterization of organic and inroganic materials will be stressed. The philosophy of the course relates to the combined use of these techniques for structural identification, as opposed to use of a single technique.

811. Chemical Seminar. 1–18 hours.

821A. Modern Inorganic Theory. 3 hours.
Prerequisite: 20 hours of chemistry with laboratory.

821B. Modern Inorganic Theory. 3 hours.
Prerequisite: CHM 821A.

821C. Modern Inorganic Theory. 3 hours.
Prerequisite: CHM 821B.

824. Current Topics in Inorganic Chemistry. 3 hours. Max. 21 hours.
Lectures or lectures and laboratories.

831A. Modern Organic Theory. 3 hours.
Prerequisite: CHM 342 or equivalent.

831B. Modern Organic Theory. 3 hours.
Prerequisite: CHM 831A or equivalent.

831C. Modern Organic Theory. 3 hours.
Prerequisite: CHM 831B or equivalent.

834. Current Topics in Organic Chemistry. 3 hours. Max. 15 hours.
Prerequisite: CHM 831C or consent of head of department.

840. Advanced Organic Synthesis. 1–5 hours.
Consultations and laboratory periods.
Prerequisite: CHM 342.
Selected advanced syntheses will be studied historically and in the laboratory.

849. Introduction to Research. 5 hours. One consultation and four library or laboratory periods.
Prerequisite: CHM 427 or 442 or 580 or 491C.

881A. Advanced Analytical Chemistry. 3 hours.
Prerequisite: CHM 491C.

881B. Advanced Analytical Chemistry. 3 hours.
Prerequisite: CHM 881A.

881C. Advanced Analytical Chemistry. 3 hours.
Prerequisite: CHM 881B.

884. Current Topics in Analytical Chemistry. 3 hours. Max. 15 hours.
Prerequisite: CHM 881A and B.

891B. Advanced Chemical Thermodynamics. 3 hours.
Prerequisite: CHM 492.

895A. Advanced Quantum Chemistry I. 3 hours.
Prerequisite: CHM 491C or equivalent.

895B. Advanced Quantum Chemistry II. 3 hours.
Prerequisite: CHM 493.

895C. Statistical Thermodynamics. 3 hours.
Prerequisite: CHM 492.

895E. Molecular Structure. 3 hours.
Prerequisite: CHM 895B.

895F. Special Topics (Physical Chemistry). 3 hours. Max. 9 hours.
Prerequisite: Consent of the instructor.
Advanced topics of current interest and importance in physical chemistry.

900. Chemical Research. 1–50 hours.

901. Problems in Chemistry. 1–50 hours.

930. Thesis. 5–50 hours.

CLASSICS (CLC, GRK, LAT)

J. W. Alexander
(*Park Hall, North Campus*)

Graduate work is offered in Latin and Greek leading to a Master of Arts degree. A student may choose Latin or Greek as one of his languages in the program leading to the Doctor of Philosophy in comparative literature.

Reading knowledge of a language other than Latin or Greek is required for the masters' degree.

600. Advanced Reading Course in Latin.
Prerequisite: 10 hours of advanced work in Latin.
Reading in Latin authors; review of grammar; history of Latin literature.

600. Advanced Reading Course in Greek.
Prerequisite: 10 hours of advanced work in Greek.

610. (LIN) Comparative Grammar of Greek and Latin. 5–10 hours. (Klein)
Prerequisite: Two quarters or equivalent of either Greek or Latin.
An introduction to the comparative phonologies and morphologies of Greek and Latin, with emphasis on the positions of these two languages within the Indo-European language family and their importance for Indo-European linguistics.

650. Classical Mythology.
Prerequisite: 10 hours of advanced courses in classics, modern languages, or literature.
The study of the myths of Greece and Rome and of their influence in western literature, art, music, and philosophy.

656. (CML) Homer and the Epic Tradition. (Alexander)
A study of Homer in translation emphasizing his influence on later European literature. Analysis of the epic as a literary form; reading of selected epics of other periods.

657. (CML) Classical Drama. (Best)
A study in translation of tragedies and comedies surviving from ancient Greece with particular emphasis on the development and influence of dramatic forms and variations in themes of classic origin. Reading of Greek and Roman plays and selected plays of other literatures chosen for comparison.

658. Roman Literature in Translation. (Tucker)
Detailed study of the greater poets of the first century B.C., emphasizing Catullus and Vergil and their Hellenistic background.

800. Greek Seminar.

801. Greek Civilization. (Alexander)
Prerequisite: 10 hours of advanced courses in classics, modern languages or literature.
Survey of Greek civilization, with emphasis placed on a selected topic for special study; readings in Greek literature in translation. Knowledge of Greek not required.

802. Roman Civilization. (Alexander)
Prerequisite: 10 hours of approved advanced courses in classics, modern languages or literature.
Survey of Roman civilization, with emphasis placed on a selected topic of special study; readings in Roman literature in translation. Knowledge of Latin not required.

930. Thesis. 5–50 hours.

COMPARATIVE LITERATURE (CML)

Nan C. Carpenter
(*Park Hall, North Campus*)

Foreign language requirements: M.A., fluent reading knowledge of one and good knowledge of another; Ph.D., fluent reading knowledge of two and a fair knowledge of a third, one of the three being a classical language.

Students in the comparative literature department do part of their work in this department and part in the departments of the various literatures. The M.A. requires 40 hours of courses plus a thesis on a comparative topic. The Ph.D. has no specified number of hours, but requires four fields of concentration: (1) a major literature, (2) a minor literature, (3) a literary period of genre in Occidental literature generally, (4) anything relevant except a duplication of (3). Thus the fourth area can be a third literature, a period (if the third was a genre), or a relevant subject outside of literature, such as aesthetics, art or music history, or history. The student is also expected to have a general familiarity with Occidental literature, and, regardless of his particular specializations, a good knowledge of the major literary works specified in a doctoral reading list. The dissertation must be on a comparative topic.

The prospective student in comparative literature should look over the announcements of the offerings in the departments of the individual literatures in which he is interested, as well as those of the comparative literature department.

Prerequisite for admission to any of the following courses is a fluent reading knowledge of at least one foreign language or the consent of the instructor.

607. Renaissance European Literature. (Carpenter)
A survey of the literatures of Western Europe (Italian, French, Spanish, Germanic, and English), 1450–1600, with emphasis on literary types and prevailing ideas. Reading of representative works.

608. The Romantic Movement in Western Literature. (Unger)
A comparative study of the rise and development of Romanticism in the 18th and 19th centuries, with reading of selected literature and criticism.

609. Modern Continental Poetry. (Harrison)
A study of experimental trends in lyric poetry of Western Europe from mid-nineteenth century to the present.

611. Medieval Narrative.
A study of the types of medieval narrative—epic, romance, saga, beast-epic, *fabliau*, and *exemplum*—with reading and analysis of outstanding examples.

612. 18th-Century European Literature. (Bogue)
A survey of the literature of England, France, and Germany in the 18th century, with emphasis on literary types and prevailing ideas. Reading of representative works.

613. Satire in European Literature.
A comparative study of satire as a literary type. Its history in Western literature will be traced, and outstanding examples of various types and periods will be studied in detail.

615. The Novel. (Klotz)
Prerequisite: Knowledge of one language other than English.
A study of the novel as a genre. Origins of prose fiction, theory of the novel, and representative readings from the 16th through the 20th centuries in Spanish, English, French, German, and Russian.

617. The Modern Continental Novel. (Harrison)
A study of the European novel since World War I.

630. (ENG) History of Literary Criticism.

651. Music and Literature.
A comparative study of the forms, relationships, and aesthetics of music and literature.

656. (CLC) Homer and The Epic Tradition. (Alexander)

657. (CLC) Classical Drama. (Best)

802A-G. Seminar in Literary Periods and Genres. 5 hours each.
A specific period or genre will be studied in detail with emphasis upon individual research.
B. The Baroque. (Carpenter)
C. The Middle Ages (Carpenter)

810. Problems in Comparative Literature. (Unger)
A consideration of some problem or group of closely related problems in comparative literature, with special attention to methodology, bibliography, and the processes of research.

813A-G. Seminar in Literary Themes and Types. 5 hours each.
A specific theme or type will be studied in detail with emphasis upon individual research projects.
A. Problems in Literary Translation. (Harrison)

840. Problems in Literary Criticism.
A research course that will involve the working out by individual students of specific problems of literary criticism usually cutting across national boundaries.

898. Readings in Comparative Literature.
Independent reading with regular conferences and reports, in some aspects of comparative literature.

930. Thesis. 5–50 hours.

DRAMA AND THEATRE (DRA)

August W. Staub
(*Fine Arts Building, North Campus*)

Graduate work in drama and theatre is offered in the areas of history and theory of dramatic art and in the creative and technical aspects of dramatic art for the M.F.A. degree. Details of this program may be found on page 32. Facilities include the Fine Arts Theatre, the Balcony Theatre, the Arena Theatre and the Cellar Theatre. Extensive library facilities including several collections are available. Interdepartmental research may be arranged in classics, English, French, German, Spanish and comparative literature.

Prospective students who desire financial aid should complete their application with the Graduate School and the Department of Drama and Theatre before February 15.

600. Playwriting. (Longman)
Laboratory course in playwriting, including study and practice in writing for the modern stage.

601. American Drama and Theatre: Beginnings to O'Neill. (Kahan)
Prerequisite: Two senior division courses in English or drama or consent of instructor.
A study of American drama and theatre from its pre-Revolutionary beginnings to World War I with special emphasis on representative plays, playwrights, theatres, actors, movements, and para-theatrical activities of the period.

620. History of the Theatre I.
The development of the physical theatres and production styles from Greece through Shakespeare.

621. History of the Theatre II.
The development of the physical theatres and production styles from the Elizabethan period to Ibsen.

623. Theatre History from Mid-Nineteenth Century to the Present.
A study of theatre history from the middle of the 19th century to the present. Special stress will be placed on theatre architecture, directing and acting theory.

629. Play Analysis. (Longman)
Prerequisite: Two senior division courses in English or drama or consent of instructor.
A study of a method of analysis for stage plays and an intensive examination of selected modern and period plays.

633. Period Dress, Manners and Movement for the Theatre.
An advanced survey of dress, manners, and movement of selected theatrical periods.

648. Afro-American Drama. (Longman)
A study of the black theatre in America and its dramatic literature.

665. (ENG) Modern Drama. (Free, Thurman)

687. Oral Interpretation of Dramatic Literature. (Head)
Prerequisite: Two senior division courses in English, education, speech or drama.
A study of the theory, techniques, and principles of interpretation of drama from the points of view of the oral interpreter and actor. Development of oral skills through the study of selected plays.

688. Readers' Theatre. (Head)
Prerequisite: Two senior division courses in English, education, speech or drama.
A study of the theories, techniques and conventions of Readers' Theatre.

705ABC. Applied Drama Laboratory. 1 hour each.
Individually assigned production and/or performance crew.

706ABC. Drama Performance. 1 hour each.
Limited to students who qualify for major assignments with University Theatre, Children's Theatre, Creative Dramatics, Readers' Theatre and related departmental organizations under faculty supervision and with the approval of the head of the Department of Drama and Theatre.

711. Theatre Management. (Graham)
A critical examination of theatre management. A survey of the organization of various non-professional theatres and promotional and managerial procedures.

730. Play Production for the High School Teacher.
Prerequisite: Two senior division courses in speech and/or drama or secondary education.
Techniques and methods for meeting the problems of play selection and play production in the secondary school. Suggested elective for all teachers of English in high schools.

731. Technical Problems. (Rees)
Prerequisite: DRA 334 or equivalent.
Advanced study of the theory and styles of design (lighting, setting, costuming) in the theatre with special emphasis on the techniques of collaboration between director and technical director.

733. Stage Costume Design and Research.
Prerequisite: DRA 230 and 333 or equivalent.
Research studies and techniques with application to the design of theatrical costumes.

735. Scene Design. (Graham, Stell)
Prerequisite: DRA 230 and 334 or equivalent.
The principles and techniques of scene design and scene painting. Development of floor plans, sketches and scaled models. Suggested elective for majors in the visual arts. (Lecture-laboratory course.)

736. Stage Lighting. (Graham, Stell)
Study of problems of lighting in the theatre; lighting instruments, lighting control; operation of lighting equipment. Practical assignments in the University Theatre and Laboratory Theatre.

744. Television Acting and Performing.
Prerequisite: Two senior division courses in speech communication, drama, or radio-television.
The theory and practice of television acting with primary emphasis on dramatic material as it relates to professional television.

745. Advanced TV Directing.
Prerequisite: JRL 543 or permission of the instructor.
An advanced study of television directing with special emphasis on dramatic material; video tape editing, and color special effects.

746. Advanced Projects in Radio-TV-Film
Prerequisite: JRL 543 or permission of instructor.
An independent projects course in radio, television, and film media. Students may do projects in one or more media.

752. Actor Training I.
Prerequisite: DRA 250 or equivalent.
An intensive course in voice and body training. The course stresses the development and use of the voice for the actor.

753. Actor Training II.
Prerequisite: DRA 752 or equivalent.
An intensive course in voice and body training. The course stresses the development and use of the body for the actor.

754. Characterization for the Actor.
Prerequisite: DRA 752 & 753.
A study of role analysis and the problems and techniques of creating subtext with special relation to the actor's natural qualities.

755. Acting IV: Advanced Acting.
Prerequisite: DRA 752, 753, 754 or equivalent.
A study of the problems and techniques of acting in periods and styles through intensive scene study and performance.

756. Projects in Acting.
Prerequisite: DRA 755 or equivalent.
Advanced projects in dramatic performance in ensemble.

761. Play Direction. Laboratory.
Prerequisite: DRA 560 or equivalent.
Course concentrates on the director's analysis of the play, the actor-director relationship and theatrical style. Each student directs a one-act play.

771. Play Directing: Periods and Styles.
(Baffico)
Prerequisite: DRA 761 or equivalent.
Lab-lecture course emphasizing methods of directing plays from major periods, including classical, Elizabethan, Neoclassical, and major styles, such as naturalistic, expressionistic, and absurdist.

773. Seminar in Stage Costume Design.
Prerequisite: DRA 733.
Advanced problems and historical styles in theatrical costumes. Projects in design of costumes for specific theatre productions.

775. Seminar in Advanced Scene Design.
(Graham, Stell)
Prerequisite: DRA 735.
Advanced study of techniques and resources of scene design, dealing with principles and practices of rendering and composition, design research and styles of scene design.

776. Seminar in Advanced Stage Lighting.
(Graham, Stell)
Prerequisite: DRA 736.
Advanced study of theory and practice of stage lighting, dealing with advanced forms of circuitry and control equipment, design and execution of light plots for complex stage productions and methods of lighting applied in varying forms of theatrical presentation.

792. Creative Dramatics for Children.
A thorough study of the theories, principles, and techniques in original dramatizations for children. Preparation for students who wish to do creative work in drama with children. Practical laboratory experience.

794. Introduction to Children's Theatre.
A course in the theories and techniques of children's theatre. The entire production procedure, including play selection, play analysis, and directing techniques, will be emphasized. Practical laboratory experience.

796. Puppet Theatre.
A comprehensive survey of the history of puppetry and instruction in the construction and manipulation of puppets, muppets and marionettes.

810. Seminar in Dramatic Comedy.
A study of comedy as a dramatic form with specific emphasis on representative types and critical theory, from ancient Greece to the 20th century.

820. Seminar in Theater History.
Advanced problems in the study of theater history.

840. Seminar in Dramatic Literature.
Advanced problems in the study of dramatic literature.

900. Research Seminar and Special Problems in Drama and Theatre.
Prerequisite: Departmental approval.
Individually directed study under faculty supervision on research problems in drama and theatre.

901. Research Seminar and Special Problems in Drama and Theatre.
Prerequisite: Departmental approval.
Individually directed study under faculty supervision on research problems in drama and theatre.

921. M.F.A. Project. 3–5 hours.

930. Thesis. 5–50 hours.

EDUCATION

Huey B. Long
(*Aderhold Building, South Campus*)

Upon acceptance, the graduate majors in education are assigned to departments by the Director of Graduate Studies, College of Education. Department chairmen will assign a major professor who will provide the student with detailed information concerning the requirements of the graduate degree for which he or she wishes to become a candidate.

Credit earned by registration through the Area Teacher Education Services may be applied toward the requirements for the degree of Master of Education and Specialist in Education up to a maximum of 30 quarter hours for the masters and 20 quarter hours for the specialist, provided the student has been, or is later, admitted to resident graduate study in Athens. For further details on the Master of Education and Specialist in Education programs, please see pages 32 and 34. Details of the Master of Art Education and Master of Music Education programs may also be found on pages 31 and 33.

EdD enrollees are required to register for a minimum of three quarter hours in 899. (Further details on this program may be found on page 35.

Six and seven hundred level courses are generally designed for students enrolled in a master's degree program. Eight and nine hundred level courses are generally designed for students pursuing specialist or doctoral degrees. However, due to differences in background many students may have a mixture of 600, 700, 800, and 900 level courses regardless of degree objective.

COMMON COURSE OFFERINGS

The following courses are offering in various programs and departments of the College of Education, with change in content and emphasis appropriate to the program. These courses are merely listed by title under the department.

600. Special Problems. 1–10 hours.
Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of original data pertinent to a given problem. Offered in all departments as scheduled.

642. Early Childhood Education. 1–5 hours.
Course especially designed for graduate majors in Early Childhood Education.

705. Problems of Teaching.
Prerequisite: Four courses in education.
Instructional procedures and evaluation in terms of public growth. This course is available in those departments having responsibility for preparing subject matter specialists in the public schools (e.g., EAD, ECT, EEN, etc.).

708. Curriculum Planning.
Prerequisite: Four courses in education and either teaching experience or consent of the instructor.
Problems of the curriculum of elementary and secondary schools. This course is available in those departments having responsibility for preparing subject matter specialists in the public schools (e.g., EAD, ECT, EEN, etc.).

746, 747, 748. Internship in Teaching. 5–15 hours.
Prerequisite: Consent of instructor.

765. Applied Project in Education. 5 hours.
Functional study of a topic or problem in education significantly related to the student's professional task.

899. Research Seminar. 1–10 hours.
Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

930. Thesis in Education. 5–50 hours.

960, 961, 962. Educational Research. 5 hours each.
Prerequisite: Four courses in education and advanced graduate standing.

963. Critique of Educational Literature. 5 hours.
Prerequisite: ERS 801.
Critical interpretation and evaluation of research and theoretical writing in the field of education. Each student will make critical reviews of significant education literature in the area of his specialization. Offered in all departments as scheduled.

970, 971, 972. Internship. 5 hours each.
Prerequisite: Consent of instructor.
A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

980, 981, 982. Practicum. 5 hours each.
Prerequisite: Consent of instructor and major professor.
Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

ADMINISTRATION (EAS)

699. Research Seminar in Educational Administration.

765. Applied Project in Educational Administration.

899. Research Seminar in Administration.
1–10 hours.

900. Introduction to School Administration.
An introduction to the study of school administration and its contribution to the total school program.

901. Administration of Elementary and Middle Schools.
Duties of the school principal in the organization and administration of the elementary and middle school program.

902. Basic Theories of Educational Administration.
Study of current theories of organization and their application to educational administration.

903. Administration of the School Curriculum.
Study of the basic nature of man and how to organize and administer school programs consistent with man's basic nature.

904. School Data Processing.
An application of data processing to school problems, such as master scheduling, records, and accounting.

905. Administration of State and Local School Systems.
Fundamentals of state and local public school organization and administration; relation of state and local school systems to federal agencies.

906. Personnel Administration.
Principles and policies governing employer-employee relationships in the public schools.

907. The School Plant.
An overview of the relationship of the school's physical environment to the educational program and its impact on pupil and teacher behavior.

908. Simulation and Decision Making in Educational Administration.
Study of the components of an information-decision system with an emphasis on problem identification and analysis; includes operations research methodology, PERT, linear programming, and simulation with educational applications.

909. Economics of Education.
Economic forces, including those involved in financing public schools, are examined.

910. School Business Management.
An overview of business functions in school administration.

911. School Law.
Legal principles applicable to public education, the legal structure of the public school system; legal problems related to teacher and student personnel.

912. International Education.
Survey of selected foreign school systems and influences affecting those systems.

913. Trends and Issues in Educational Administration.
Study of selected problems and issues in educational administration.

914. The School As a Social System.
Education viewed as one social system within the matrices of other social systems.

915. Administration of Secondary Schools.
Duties of the school principal in the organization and administration of secondary schools.

916. Administration of Community Education—Focus on Community School.
An overview of the community school, its history, purposes, functions; and an investigation of the problems and challenges in the administration of community education.

917. Seminar in School Law.
Prerequisite: EAS 911 or consent of instructor.
Provides an opportunity for an in-depth study of specific areas of school law mutually agreed upon by the student and the instructor.

919. Planning for Education.
The relationship of planning concepts, principles, and approaches to system level administration including the methods and techniques of planning for a comprehensive educational program.

920. Planning and Programming of Educational Facilities.
Planning principles and strategies are reviewed; principles, concepts, processes and practices of planning and programming educational facilities are studied.

929. Politics of Education.
Examines local, state, federal and non-governmental political forces operating on the public schools.

930. Thesis in Administration. 5–50 hours.

935. Educational Resource Management.
Study of the principles, methods and practices of systematic approaches to educational resource management with particular emphasis on the sets of processes involved in program budgeting and management by objectives in educational administration.

939. School-Community Relations.
This course is designed to create awareness among school administrators of educational problems which arise in school desegregation and how to cope with them effectively.

960, 961, 962. Educational Research in Administration.

963. Critique of Literature in Administration.

970, 971, 972. Internship in Administration.

980, 981, 982. Practicum in Administration.

ADULT EDUCATION (EAD)

The 600 level courses are primarily for the Master's degree candidates and the 900 level courses are primarily for the Specialist and Doctoral candidates.

600. Special Problems in Adult Education.

601. An Introduction to Adult Education.
The course is a survey of adult education and is intended to aid the student in conceptualizing the social, historical and philosophical magnitude of the field.

607. Survey of Gerontology.
The course is a survey of social gerontology with an emphasis on adult education. It is designed for the practitioner and will attempt to provide background knowledge on aging and will deal specifically with program development and the involvement of older adults in educational programs.

660. Adult Teaching Strategies.
The course is a systematic inquiry into the dynamics of individual behavior, the pyschology of learning and learning theory.

662. Administrative Practices in Adult Education.
The course is to aid the student in better understanding administration theory as it applies to the administration of the adult education agency. The broad range of readings in adult education management, administration, organizational behavior, change and decision theory will be suggested.

699. Research Seminar in Adult Education.

700. Program Development in Adult Education.
The course is to develop a point of view on major issues and problems that arise in planning curricula or programs in adult or continuing education.

705. Methods in Adult Education.
The application of media, technology and group methods in adult classrooms with special attention devoted to the process of education.

765. Applied Project in Adult Education.

899. Research Seminar in Adult Education.

900. Curriculum Planning in Adult Education.
Adult Education programs in various agencies are studied and visited to acquaint the students with the agency's functions and programs.

901. Adult Education.
An overview course designed to introduce the student to the literature of adult education, the total and economic foundations of adult education and a brief history of adult programs.

930. Thesis in Adult Education.

960. Research in Adult Education: Adult Learning.
Examines the social and psychological facets of adult learning, theories of learning and physiological aspects of aging, in terms of the adult student.

961. Research in Adult Education: Contemporary Trends and Social Problems.
The urban setting and its influence on the adult and on adult education programs is the focus of this course. Strategies of coping with the continuing movement of population from rural to urban are extensively treated.

962. Research in Adult Education: Administration.
Duties of the program administrator, the local coordinator and program directors are discussed. Finance, record keeping and leadership are discussed in context of several agencies.

963. Critique of Educational Literature in Adult Education.
Research studies, dissertations and journal articles in adult education are reviewed by the doctoral student near the dissertation stage in his program.

970, 971, 972. Internship in Adult Education.

980, 981, 982. Practicum in Adult Education.

AGRICULTURAL EDUCATION (EAG)

600. Special Problems in Agricultural Education.

699. Research Seminar in Agricultural Education.

705. Problems of Teaching Agricultural Education.

746, 747, 748. Internship in Agricultural Education.

765. Applied Project in Agricultural Education.

(For other course offerings in Agricultural Education, see listings under Vocational Education).

ART EDUCATION (EAR)

600. Special Problems in Art Education.

699. Research Seminar in Art Education.

746, 747, 748. Internship in Teaching Art Education.

765. Applied Project in Art Education.

899. Research Seminar in Art Education.

930. Thesis in Art Education.

960, 961, 962. Research in Art Education.

963. Critique of Educational Literature in Art Education.

970, 971, 972. Internship in Art Education.

980, 981, 982. Practicum in Art Education.

(See also the following Art listings)

705. Art Experiences with Children.

713. Crafts for Teachers.

716. Modelling, Constructions, and Carving.

723A. Special Problems in Art Education.

735. Philosophy of Art Education.

736. The Teaching of Art in the Secondary School.

737. Curriculum Development in Art Education.

739. Supervision of Art.

740. The Teaching of Art in the Elementary School.

741. History of Art Education.

742. Docentship.

743. Readings in Art Education.

770. Organic Design for Contemporary Living.

840. Art Instruction in Higher Institutions.

841. Art Administration in Higher Institutions.

BUSINESS EDUCATION (EBE)

600. Special Problems in Business Education.

601. Business Communication.
Theory and Practice in the processes (thinking, reading, writing, speaking and listening) involved in business communication.

699. Research Seminar in Business Education.

700. Curriculum Planning in Business Education.
Basic principles and procedures of curriculum construction; stresses curricular content and organization; use of job analysis.

701. Theory and Principles in Shorthand and Typewriting. (Taylor)
Teaching theory, psychological principle of skill building, materials development and evaluation.

702. Principles and Problems of Basic Business Subjects for Teachers.
Organization, standards, evaluation, textbooks, materials, special teaching techniques, motivation, individual differences in the teaching of basic business courses.

703. Advanced Office Practice and Machines for Teachers.
Organization, module development, objectives, standards, evaluation, textbooks, materials, equipment, teaching techniques, individual differences in the teaching of office practice and machines.

704. Principles and Problems for Bookkeeping and Accounting for Teachers. (Sheppard)
A course for beginning and experienced teachers aimed at helping to deal adequately with the basic factors in bookkeeping-accounting. It also deals with specific suggestions for teaching selected subject matter areas in bookkeeping-accounting. Materials, teaching procedures, standards, and evaluation are emphasized.

705. Problems of Teaching Business Education.

707. Office Management.
Scientific office management; principles, equipment, supervision, information management, methods and procedures, job organization and evaluation, selection and training of office personnel.

708. Business Data Processing for Teachers.
A first course in the information science series which will prepare the graduate student to teach business data processing at the introductory level and prepare him with the required background to successfully pursue advanced courses in the field of data processing. Includes coding structures, recording media, hardware and overview of programming languages.

709. COBOL Business Applications for Teachers.
Applications to problems in inventory control, accounts receivable and payroll. Emphasis is placed on teaching at secondary and post-secondary levels.

710. Systems Analysis and Design for Teachers.
Advanced programming and systems design for prospective or in-service teachers of data processing. Includes project management, documentation standards, hardware, software, forms design, feasibility studies, and file organization.

711. Tests and Measurements in Business Education. (Taylor)
Theory, construction of educational tests including criterion selection and development, item construction, item analysis, text validation; use of standardized tests in business education subjects.

712. History and Philosophy of Vocational Business Education. (Calhoun)
Principles and philosophy of vocational education as related to business and office education; concepts and processes for development of vocational approach to curriculum design and instruction.

746, 747, 748. Internship in Teaching Business Education.

765. Applied Project in Business Education.

776. Family Finance Education.
Economic factors related to sound consumer education and family financial planning; using and accounting for money, acquiring financial resources; covering risks; and planning expenditures. Development of instructional materials for classroom use.

899. Research Seminar in Business Education.

900. Curriculum Planning in Business Education (Advanced). (Calhoun)
Theory and process underlying curriculum design; models, issues and trends; needs assessment; and curriculum revision.

902. Administration and Supervision of Business Education. (Calhoun)
Administrative and supervisory relationships in state and local programs, staff qualifications, program development and evaluation.

910. Coordinating Work Experience Programs in Business Education.
Planning, developing, coordinating, and evaluating occupational experience programs analysis of job as textbook for planning and individualizing related instruction.

920. Thesis in Business Education.

960, 961, 962. Research in Business Education.

963. Critique of Educational Literature in Business Education.

970, 971, 972. Internship in Business Education.

980, 981, 982. Practicum in Business Education.

COUNSELING AND HUMAN DEVELOPMENT SERVICES (ECP)

600. Special Problems in Counselor Education.

699. Research Seminar in Counselor Education.

700. Fundamentals of Guidance in Elementary and Secondary School.
An introduction to professional training for counselors and an opportunity for teachers to acquire an overview of guidance and counseling functions in the school program.

701. Individual Appraisal.
Principles of testing, types of scores, use of instruments and methods of assessing abilities, achievement levels, interests, attitudes, developmental variables, vocational skills, and personality characteristics. Use of test and non-test data in guidance and counseling.

702. Case Study Techniques.
Prerequisite: ECP 700, 701, or consent of instructor.
The school counselor's role as consultant and resource person for administrators, teachers, and parents. Skills in the techniques of collecting and assimilating data pertinent to the understanding of behavior and the implementation of appropriate intervention techniques to effect behavior change; practice in the use of case study techniques in a school setting.

765. Applied Project in Counselor Education.

888. Counseling.
An introduction to theoretical approaches in counseling and their application to settings in education, rehabilitation, community, and employment. Examination of the effects of differences in counselor/counselee roles, values, and goals.

899. Research Seminar in Counselor Education.

901. Vocational Development.
Career development conceptual formulations; career information in teaching and counseling; sequential decision-making processes and strategies; job placement skills; nature, sources, and functions of information available to assist individuals in formulating goals and comprehensive plans.

902A. Pupil Personnel Services.
Prerequisite: Four graduate courses in education, psychology, sociology.
Analysis of the interrelated functions of the several specialized pupil personnel workers, with particular reference to their role in the total educational program, and the principles governing the scope of such services in adapting them to public educational institutions of varying size.

902B. Organization and Leadership of Pupil Personnel Services.
A course for practicing and potential directors of pupil personnel services. An examination of organizational patterns and supervisory responsibilities of the director in the development and operation of a comprehensive program of pupil personnel services.

903. Principles of Student Personnel in Higher Education.
An introduction and orientation to the field of student affairs work with emphasis upon its philosophical, psychological, and sociological foundations and primary objectives and functions within institutions of higher learning. Special attention is given to the personal development of college students.

904. Advanced Theories of Counseling.
Prerequisite: ECP 888 and consent of instructor.
An examination of the various theories of counseling and the implications for the practicing counselor. Specific attention is focused upon selected aspects of the several theories with consideration of the similarities and differences.

905. Principles of Group Guidance.
Prerequisite: Consent of instructor.
Study and practice of basic approaches to group procedures in relation to group goals, objectives, and dynamics and the effect that particular group procedures have upon the facilitation of individual and group development.

906. Theories and Procedures of Group Counseling.
Prerequisite: ECP 905 or the equivalent and consent of instructor. (Concurrent enrollment for two-quarter sequence with ECP 986.)
Basic group counseling theories with emphasis on techniques and application, ethical responsibilities, and current trends with experiential opportunities provided.

907. Personal and Social Evaluation Techniques for Elementary Counselors.
Prerequisite: ECP 700, 701 and 888 or consent of instructor.
The study and laboratory application of methods of individual and group evaluation techniques applicable in the classroom and agency settings and pertinent to the consulting role of counselors. Particular emphasis is placed on applied behavior modification techniques.

911. Practices in Student Personnel in Higher Education.
Prerequisite: ECP 903 and consent of instructor.
Skill building and competency attainment through experiential laboratory training in specific functions and practices of student affairs professionals in institutions of higher learning.

913. Seminar on the College Student.
Prerequisite: Six graduate courses in education, psychology, sociology.
Examination of the ecology of the college student in America today. Recent research and literature on college student development, personality characteristics, values, and cultures is emphasized. Especially relevant for those who plan to hold teaching or administrative positions in institutions of higher learning.

920. Introduction to Rehabilitation Counseling.
This course is designed to give the student a comprehensive introduction to Vocational Rehabilitation. Among the topics presented are: (1) philosophy of rehabilitation; (2) historical development of vocational rehabilitation; (3) legis-

lative acts and amendments; (4) organizational structure of vocational rehabilitation; (5) vocational rehabilitation programs and speciality areas; (6) cooperating agencies and community resources; (7) referral and delivery systems; (8) incidence of disability; (9) the rehabilitation process; (10) client study; (11) professional organizations; and (12) professional issues and ethics.

921. Medical and Psychological Aspects of Disability.
Prerequisite: ECP 920 or EXC 700, PSY 623 or 651, or SOC 627.
A broad spectrum view of the incidence and nature of medical and psychological disabilities and their functional limitation as related to vocational objectives. Emphasis is given to chronic disabling conditions, treatment, functional limitations, prognosis, and vocational significance of these disabilities. The medical and psychological aspects are presented by staff and consulting specialists. The specialties covered include cardiology; chest diseases; internal medicine; orthopedics, neurology and psychiatry, with special attention given to residual function, treatment methodology, prognosis, and counselor-consultant relationships.

930. Thesis.

960, 961, 961. Educational Research in Counselor Education.

963. Critique of Educational Literature in Counseling.
Prerequisite: Consent of instructor.
A review and critique of the professional literature in counseling with emphasis upon selection criteria and procedures for counselor preparation; programs and standards for counselor preparation; assessment of counselor performance; ethical and legal considerations; paraprofessionals in counseling; and status of research in counseling.

970, 971, 972. Internship in Counselor Education.

973, 974. Research Internship in Counseling.

980, 981, 982. Practicum in Counseling.

986. Practicum in Group Counseling.
Prerequisite: ECP 905 or the equivalent and consent of instructor. (Concurrent enrollment for two quarter sequence with ECP 906.)
Supervised practice in group counseling with opportunities for practicum experiences in diverse settings.

987, 988. Practicum in Student Personnel in Higher Education.
Supervised practice within the student affairs program at the University or other institutions of higher learning. Practical work and observation experience is offered with supervision by members of the student affairs staff. A weekly seminar involving all practicum students is held under the direction of the faculty practicum coordinator.

CURRICULUM AND SUPERVISION (ECS)

600. Special Problems in Curriculum, Teaching and Supervision.

702. Fundamentals of Curriculum.
Prerequisite: Four courses in education.
Study of the nature, function, and evolution of curricula in education.

704. Trends and Issues in Curriculum.
Prerequisite: Student teaching or equivalent.
Trends in curriculum design and content and factors which influence curriculum innovations.

705. Problems of Teaching.

706. Trend and Issues in Instruction.
Exploration of status of instruction derived from literature, research and practice. Consideration of positions under discussion or debate in the field.

707. Instructional Design and Development.
Prerequisite: ECS 709 or EAV 700.
Application of skills to the design of instructional stituations for specified objectives and learner characteristics through organizing content, planning teaching-learning strategies, selecting resources and identifying evaluation techniques.

708. Curriculum Planning.
Prerequisite: ECS 702.
Application of principles underlying curriculum improvement and operational strategies with emphasis on the organization of schools and school systems.

709. Fundamentals of Instruction.
Study of basic nature of classroom instruction, key elements of the instructional process, organizing operations, and skills for evaluating and improving instruction.

721. Introduction to Supervision.
An introduction to the study of school supervision and its contribution to the total school program.

722. Supervision of Instruction.
Prerequisite: ECS 721 or basic course in supervision.
A comprehensive study of the basic concepts of supervision and ways and means of improving instruction through supervision.

750. (ERD) Supervision of the Reading Program.

765. Applied Project in Curriculum, Instruction and Supervision.

802. Comparative International Curricula.
A comparative study of curricula in elementary, secondary and higher education in selected representative types of foreign countries in a contemporary and historical framework.

803. (EAV) Instructional Technology.
Prerequisite: EAV 707 or one graduate course in ECS or EAV.
Study of both processes and products of technology as applied to curriculum and instruction. Consideration of the impact of educational technology on instruction to date and its potential for the future.

804. Curriculum Theory.
Prerequisite: Two courses in curriculum and consent of instructor.
The identification, analysis, and synthesis of knowledge basic to the development of curriculum theory with consideration for the design of curriculum strategies.

823. Trends and Issues in Supervision.
Prerequisite: Two courses in supervision and consent of instructor.
Identification and investigation of problems in supervision; research and experimentation in the use of supervisory procedures.

824. Group Development.
Prerequisite: Consent of instructor.
Group process and problems of group work, improving behavioral skills in group leadership and membership roles, and improving group planning and execution of educational programs.

825. Leadership for Staff Development.
Prerequisite: ECS 721 and 722.
Procedures and patterns for comprehensive planning and systematic implementation of staff improvement programs with emphasis on organization development and management by leadership personnel.

899. Research Seminar.

900. Curriculum Development, K-12.
Analyses of existing theoretical models for curriculum deevelopment, the generation of new models, and the assessment of the effectiveness of the models for evaluating and implementing proposals for program change and for the determination of additional program needs.

901. Instructional Theory
Prerequisite: ECS 709.
Advanced seminar for students to interpret existing theory and develop new theory. Study of research on present alternatives, appropriate developments and process of creating instructional theories.

902. Curriculum Development, Higher Education.
Overview of models for program improvement at colleges and universities in relation to typical organizational patterns and consideration of innovative practices.

904. (EPY) Problems in the Evaluation of Ins ruction.
Interpretation of the results secured from evaluative techniques.

925. Supervision Theory.
Prerequisite: Two courses in supervision and consent of instructor.
Interdisciplinary study of forces impinging upon education and the implications of these findings for supervision.

926. Instructional Systems Analysis.
Prerequisite: Two courses in instruction and consent of instructor.
Investigation of instructional problems as a basis for improvement or redesign. Study of instruction through consideration of components.

930. Thesis.

960, 961, 962. Educational Research.

963. Critique of Educational Literature.

970, 971, 972. Internship.

980, 981, 982. Practicum.

DISTRIBUTIVE EDUCATION (EDE)

600. Special Problems in Distributive Education.

699. Research Seminar in Distributive Education.

700. Distributive Occupational Experiencee: Sales.
Directed work experience in cooperatingdistributive business; 500 hours in sales or sales-supporting business.

701. Distributive Occupational Experience: Junior Management.
Directed work experience in cooperating distributive business; 500 hours in supervisory and junior management positions.

702. Adult Distributive Education.
Objectives, problems, organization, and promotion of adult distributive education training.

705. Problems of Teaching Distributive Education.

706. Curriculum Planning in Distributive Education.
A study of the history, philosophy, and principles of curriculum development in distributive education; study of evaluation of curricula in various programs in operation; procedures, media, methods, and factors involved in the development of distributive education curricula including DECA and new trends in the field. Designed for experienced teachers, administrators, post secondary personnel and supervisors of distributive education.

746, 747, 748. Internship in Teaching Distributive Education.

765. Applied Project in Distributive Education.

Each M.Ed. candidate who plans to complete the Applied Project should attend a Seminar prior to enrolling in EDE 765. A minimum of one quarter hour credit is recommended.

(For other course offerings in distributive education, see listings under Vocational Education).

EARLY CHILDHOOD EDUCATION (ECE)

600. Special Problems in Early Childhood Education.

696. (CFD) Guidance of Children and Parents.

699. Research Seminar in Early Childhood Education.

700. Early Childhood Education.
Facilities, equipment, organization, and administration of curricula in pre-primary education.

701. Current Trends in Early Childhood Education.
Interdisciplinary factors and research in the education of children ages three to eight.

705. Problems in Teaching Early Childhood Education.

746, 747, 748. Internship in Teachiing Early Childhood Education.

765. Applied Project in Early Childhood Education.

899. Research Seminar in Early Childhood Education.

930. Thesis. 5–50 hours.

960, 961, 962. Research in Early Childhood Education.

963. Critique of Educational Literature in Early Childhood Education.

970, 971, 972. Internship in Early Childhood Education.

980, 981, 982. Practicum in Early Childhood Education.

EDUCATIONAL MEDIA (EAV)

600. Special Problems in Educational Media.

699. Research Seminar in Educational Media.

700. (ELE) Utilization of Educational Media.
Survey of educational communications media and technology; characteristcs of media, the teaching-learning process, school media programs, sources, evaluation and utilization programs, sources, evaluation and utilization of media.

701. Design and Production of Educational Media.
Laboratory course in design and production of instructional media: transparencies, slides, tapes and other media for instruction.

702. Educational Television Production.
Prerequisite: EAV 501/701 or permission of instructorinstructor.
Design, production, and use of videotapes. Laboratory experiences with closed circuit, portable television equipment suitable for school use.

703. Educational Television Production, Advanced.
Prerequisite: EAV 501/701, or permission of instructor.
Instructional design of media materials including various types of graphic, photographic, and audio materials; design of learning packages.

704. Management of Educational Media Services.
Prerequisite: EAV 700.
Problems of design and development of mediated learning systems and learning resource centers. Planning, organizing, budgeting media support systems.

706. Selection and Evaluation of Educational Media
Prerequisite: EAV 700.
Study of sources, strategies and criteria for evaluation of non-book media leading to development of critical judgments regarding the educational value of such materials.

707. (ECS) Instructional Design and Development.
Prerequisite: ECS 709 or EAV 700.
Examination of strategies for the design of instructional stiuations for specified objectives and learner characteristics through organizing content, planning teaching-learning strategies, selecting resources, and identifying evaluation techniques.

720. (EIA) Photography in Instruction.
Prerequisite: EAV 501/701 or permission of instructor.
Basic principles, skills, and techniques of photography and their application to problems of instruction. Areas covered include introductory skills in camera and film use, darkroom procedures, processing and printing in black and white, also color.

721. (EIA) Graphic Technology.
Prerequisite: Permission of department.
Demonstrations, lectures and laboratory sessions designed for majors in Educational Media and Industrial Arts to develop competencies in graphic technology. Emphasis is placed on layout, image assembly, photo conversion, platemaking, offset and screen printing, binding, finishing. (Enrollment is restricted to Education-Industrial Arts majors.)

722. (EIA) Advanced Graphic-Photographic Techniques.
Prerequisite: EAV/EIA 520/720 or 521/721 or permission of instructor.
An advanced projects course in graphic and photographic production. Through lectures and demonstrations and lab experiences, students will develop advanced graphic/photographic techniques for the production of educational materials.

746, 747, 748. Internship in Educational Media.

765. Applied Project in Educational Media.

803. (ECS) Instructional Technology.
Prerequisite: EAV/ECS 707 or one graduate course in ECS or EAV.
Study of both processes and products of technology as applied to curriculum and instruction. Consideration of the impact of instructional technology to date and its potential for the future.

960, 961, 962. Research in Educational Media.

EDUCATIONAL PHILOSOPHY (EPH)

801. Philosophy of Education.
A critical examination of philosophical questions concerning education.

802. History of Education.
Persistent and recurring problems of education in Western culture.

803. American Higher Education.
Theories and principles of American higher education and the various types of institutions in higher education.

804. Pragmatism and Education.
A critical examination of the educational writings of William James, Charles S. Pierce, and John Dewey.

806. Social and Political Philosophies of Education.
A critical study of social and political philosophies of education, such as those of communism, facism, and various types of democracy.

807. Ethics and Education.
Theories of value and evaluation, ethical discourse and argument, and other uses of ethics in educational writings.

808. Contemporary Philosophies of Education.
A study of recent development in the field as revealed in current literature.

899. Research Seminar in Educational Philosophy.

930. Thesis in Educational Philosophy.
5–50 hours.

963. Critique of Educational Literature in Educational Philosophy.

EDUCATIONAL PSYCHOLOGY AND MEASUREMENT (EPY)

600. Special Problems in Educational Psychology.

601. Psychology of Childhood. (Blaubergs, Dekle)
Prerequisite: Four courses in education including EPY 304 or equivalent.
Interests, abilities and needs of elementary pupils, evaluation of their total development.

602. Sex Differences and Sex-Role Sterotyping.(Blaubergs)
Prerequisite: EPY 401 or permission of instructor.

Sex differences and similarities from biological and psychological viewpoints and their interrelatedness with the educative process, including the topics of cognitive style, and the motive to avoid success; impact of socializing agents including parents, peers, toys, media and the school; evaluation of theories and research on sex-role stereotyping and sex-role acquisition.

624. Affective Dimensions in Education. (Allen, Winnick)
Prerequisite: EPY 815 or equivalent.
Study of the theories of motivation and personality that have application in educational settings. Laboratory exercises permit the building of skills rooted in personality theory to be used in the interaction with children in school. The focus upon the interpretation of children's behavior from a theoretical view will comprise most of the course offering.

672. (PSY) Programmed Instruction. (Tillman)
Prerequisite: PSY 101 or EPY 304.
Theory, evaluation and writing techniques, with practice in writing a program.

699. Resarch Seminar in Educational Psychology.

700. Tests and Measurement. (Goolsby, Payne, Stauffer)
Prerequisite: Four courses in education.
Nature and function of measurement in education, teacher-made and standardized tests and scales. Introductory statistical concepts of measurement.

706. Classroom Learning Problems of Disadvantaged Children and Youth. (Frasier, Torrance)
Prerequisite: EPY 304.
Psychological characteristics of economically disadvantaged children and youth, special classroom learning problems and classroom learning problems in integrated schools.

711. Characteristics of Gifted Children and Youth. (Bruch, Frasier)
Prerequisite: EPY 304 and 601.
Psychological characteristics of children and youth gifted intellectually, musically, artistically, and creatively; genetic studies of genius.

765. Applied Project in Educational Psychology.

800. Educational Measurement Theory. (Bashaw, Goolsby, Huberty)
Prerequisite: EPY 700 and ERS 611, ERS 812, or equivalents.
Treatment in depth of concepts of reliability, validity, error of measurement, score variance, and test analysis, with emphasis on theoretical issues.

801. Fundamentals of Child Study. 1–10 hours. (Yeatts)
Prerequisite: ERS 801 and six courses in education and psychology.
Techniques of child study; anecdotal record, home visitation, simple projective techniques, interviews, creative production.

802. Theories of Child Development. (Blaubergs)
A survey of recent literature in the field of child development with special emphasis on early childhood experiences at home and at school, peer relationships, socio-cultural influences, and determinants of self-concepts.

803. Advanced Child Study. (Yeatts)
Prerequisite: Four courses in education, including EPY 801.
Interpretation of a case record using an organizing framework of six processes; physiological, affectional, peer group, socialization, self-developmental self-adjustive.

805. Assessment of the Preschool and Primary Grade Child.
Prerequisite: One graduate course in measurement, and one graduate course in either child development or learning theory.
An in-depth and critical appraisal of numerous intelligence, perceptual-motor, and conceptual tests geared for children in the preschool and primary age range (2 to 7 years). Views of Hebb, Montessori, Piaget, Gesell, and others are integrated to provide a theoretical framework for evaluating the tests.

810. Advanced Adolescent Psychology. (Schab)
Evaluation of adolescent development; review of research related to the adolescent; and assessment of theoretical positions in the psychology of the adolescent.

812. (LIN) Seminar on the Psychology of Language: Syntax. (Blaubergs)
Prerequisite: EPY 601, 801, 802, or equivalent.
A study of the psychology of syntactic and phonological dimensions of language in the preprimary child emphasizing the effects of maturation and "spontaneous" cultural instruction. Problem of "units of language" will be investigated as well as problems in the production and perception of syntactic and phonological units.

813. (LIN) Seminar on the Psychology of Language: Semantics. (Blaubergs)
Prerequisite: EPY 812 or equivalent.
A study of the semantic and pragmatic dimensions of language development emphasizing the process of formation of lexical categories and the development of sign-referent relationships

in the preprimary child. Developmental phenomena will be considered in the light of modern linguistic semantic theory, e.g., Katz and Fodor, and classical psychological research.

814. (LIN) Seminar on the Psychology of Language: Phonology. (Blaubergs)
Prerequisite: EPY 813 or equivalent.
Will concentrate on the phenomena of the abstract and figurative use of language. The dependency of abstraction upon the concrete, sign-referent relationships will be examined. Problems of complex verbal categories and complex verbal sequences will be considered. The effects upon language development of formal instruction and maturation in the older school child will be explored.

815. Advanced Educational Psychology. (Kingston, Schab)
Prerequisite: PSY 101, EPY 304 and two senior division courses in psychology or education.
Applications of the scientific findings of psychology to the more complex problems of the educative process.

816. Problems in Educational Psychology. 5–20 hours.
Prerequisite: EPY 304.
Specialized training in selected areas of educational psychology, e.g., individual differences, motivation, evaluation procedures, creativity, pre-school testing, etc.

817. Psychology of Reading. (Kingston)
Prerequisite: EPY 401 required; EPY 802 recommended.
Psychological correlates of reading ability and disability; psychological bases for instructional methods and materials.

818. Psychology of Classroom Learning. (Kingston, Tillman, Gagné)
Prerequisite: EPY 304 and three additional courses in the area of psychology.
Analytical study of learning activities in the classroom, with reference to the learning of school subjects. The focus is on the learning process. Theories and principles of learning are related to classroom situations.

819. Cognitive Processes and Education. (Yeatts, Gagné)
Prerequisite: A course in learning theory or classroom learning.
Theories of cognitive organization and functioning, verbal learning, concept formation, thinking and problem-solving in relation to educational programs and teaching methods and materials.

820. Learning Difficulties of Gifted Children and Youth. (Bruch, Frasier)
Prerequisite: A course in learning theory or classroom learning.
Special learning problems of intellectually gifted and school learning difficulties of children specially gifted in research, art, music, drama, and mechanics.

822. Creative Thinking. (Torrance)
Prerequisite: Permission of instructor.
Survey of theory and research concerned with the creative process, creative problem solving, the creative thinking abilities and their measurement, the creative personality, and environmental and classroom conditions that facilitate creative functioning and development. Special emphasis on mastery of the creative problem solving method and practice in its applications to educational problems.

823. Strategies and Materials for the Gifted. (Bruch, Frasier)
Prerequisite: EPY 711 or permission of instructor.
Teaching strategies particularly suitable for the gifted (Problem-solving, productive thinking, inquiry, independent research, etc.) and the design and evaluation of gifted programs will be investigated in depth. Related materials will be examined and new materials developed.

825. Group Dynamics. (Powell)
Prerequisite: Consent of instructor.
Examination of major ideas about dynamics of group behavior and their educational implication. Laboratory in T-Group methods, creative problem-solving groups, and the conduct of experiments in group interaction.

826. Analysis of Behavior in Groups. (Powell)
Prerequisite: EPY 825 or course in social psychology.
Observation and measurement of behavior in educational groups, such as classroom, playground, and therapy groups and administrative and staff groups.

827. Complex Studies of Group Forces in Mental Functioning. (Powell)
Prerequisite: EPY 825, 826 or permission of instructor.
Analysis and evaluation of exemplars of complex studies of group forces affecting mental functioning.

830. Introduction to School Psychology. (McBride, Richmond)
Prerequisite: Graduate status and 10 quarter hours in educational psychology.
History, functions, duties, and responsibilities of psychologists in the schools.

831. Behavioral Approaches to Assessment and Classroom Management. (McBride)
Prerequisite: Instructor's permission.
Emphasizes the theoretical and research under-

pinnings for the application of behavioral techniques in the assessment of difficulties in the classroom. Field experience with a variety of observational techniques.

832. Behavioral Approaches to Assessment and Classroom Management. (McBride)
Prerequisite: Instructor's permission.
Emphasis on the application of assessment procedures in the development of behaviorally-oriented intervention strategies. Field experience in the classroom is integrated with didactic material.

899. Research Seminar in Educational Psychology.

902. Construction of Educational Tests. (Goolsby, Kaufman, Stauffer)
Prerequisite: EPY 700 or PSY 615, and EPY 811 or PSY 658.
Construction of educational tests, including criterion selection and development, test specifications, item construction, item analysis, test validation, cross-validation, and standardization.

904. (ECS) Problems in the Evaluation of Instruction. (Payne, Stauffer)
Interpretation of the results secured from evaluative techniques.

906. Assessment of Gifted Children and Youth. (Bruch)
Prerequisite: EPY 700.
Theories of mental abilities; measurement of mental abilities in relation to high levels of giftedness; assessment of special abilities in music, art, writing, dramatics, and other special fields.

908. Advanced Educational Measurement Theory. (Bashaw)
Prerequisite: EPY 800 and ERS 813 or equivalents.
Classic test theory; true score models; latent trait theory; true score and ability estimation; development of statistics of test construction.

910, 911. Individual Educational Testing. 5 hours each. (Richmond, Allen)
Prerequisite: EPY 700 or equivalent.
Administration and interpretation of the most commonly used individual educational tests as well as some of the most promising new ones. Advanced interpretation of the major instruments in the assessment of intelligence. Emphasis is on recognizing limitations of these instruments and examining the effects of situational and examiner influences on children's performance. Laboratory experience in communicating results of evaluation.

912. Educational Diagnosis and Treatment. (Allen, Richmond, Winnick)
The clinical use of test materials in the diagnosis of school children with special difficulties in school work. Methods of treating learning difficulties.

913. Individual Preschool Testing.
Prerequisite: EPY 910 or equivalent.
Administration, scoring, and interpretation of three major preschool instruments; the ITPA, McCarthy Scales, and WPPSI. Special emphasis is placed on psychoeducational assessment and on the translation of test findings to practical recommendations.

930. Thesis in Educational Psychology.
5–50 hours.

960, 961, 962. Research in Educational Psychology.

963. Critique of Educational Literature in Educational Psychology.

970, 971, 972. Internship in Educational Psychology.

973, 974, 975. Internship in School Psychology.

980, 981, 982. Practicum in Educational Psychology.

983, 984, 985. Practicum in School Psychology.

EDUCATIONAL RESEARCH (ERS)

600. Special Problems in Educational Research.

601. Methods of Research in Education. (Anderson, Goolsby, Scott, Stauffer, Wood)
Research skills and related competencies involved in the planning, conducting, and reporting of applied research studies of the type required for the degree of Master of Education.

611. Applied Descriptive Statistics. (Anderson, Bledsoe, Huberty, Scott, Stauffer)
Interpretations and calculations in descriptive statistics, with emphasis on correlation and regression with a brief introduction to probability and the normal distribution.

765. Applied Project in Educational Research

802. Planning Educational Research. (Bashaw, Bledsoe, Goolsby, Rentz, Stauffer)
Prerequisite: ERS 811 and ERS 812, their equivalents, or consent of instructor.
Designed for students who plan to engage in a research project as a part of degree requirements. Deals with research logic, research stragegies, research models, and research tools.

812. Applied Inferential Statistics. (Anderson, Bledsoe, Huberty, Scott, Stauffer)
Prerequisite: ERS 611 or equivalent.
Statistics of influence, sampling techniques, analysis of variance and covariance, introduction to principles of experimental design.

813. Research Design in Education.
(Anderson, Bledsoe, Huberty, Scott, Stauffer)
Prerequisite: ERS 812 or equivalent.
Complex analysis of variance and covariance, introduction to factor analysis and problems encountered in the design of educational experiments.

899. Research Seminar in Research Design.

930. Thesis in Educational Research. 5–50 hours.

960, 961, 962. Research in Educational Research.

970, 971, 972. Internship in Educational Research.

980, 981, 982. Practicum in Educational Research.

ELEMENTARY EDUCATION (EEL)

600. Special Problems in Elementary Education.

699. Research Seminar in Elementary Education.

703. The Middle School.

705. Problems of Teaching.

708. Curriculum Planning—Elementary.

746, 747, 748. Internship in Elementary Education.

765. Applied Project in Elementary Education.

899. Research Seminar in Elementary Education.

930. Thesis in Elementary Education.

960, 961, 962. Research in Elementary Education.

963. Critique of Educational Literature in Elementary Education.

970, 971, 972. Internship in Elementary Education.

980, 981, 982. Practicum in Elementary Education.

ENGLISH EDUCATION (EEN)

600. Special Problems in English Education.

642. Language Arts for Teachers in Early Childhood Education. 1–5 hours.
This course includes research and theory on lanauage acquisition, development and variability and the implemention for classroom practices. Instructional techniques in oral language activities and activities basic to experiences in written language are explored.

699. Research Seminar in English Education.

700. (LIN) Language Acquisition and Development.
A language oriented study of the stages a child goes through in acquiring his native language and the processes used in developing sophistication. Infant, childhood, and adolescent periods shown as a continuum in the native's linguistic development.

704. Language Arts for the Elementary Teacher.
Instructional procedures, materials, and evaluation in teaching English; including oral and written composition, spelling, handwriting, and grammar in the elementary school.

705. Problems of Teaching English.

706. Literature Study in Secondary Schools.
A study of literature and teaching methods appropriate for an effective secondary school literature program.

707. (LIN) English Language Studies for Teachers.
Language concepts are drawn from the history of English, from grammatical systems (with special emphasis on transformational-generative grammar), from theories of usage, semantics, lexicography, and dialectology. The focus of the course, however, is on the instructional uses or applications of these concepts.

708. Curriculum in English Education.

709. Composition in the Elementary and Secondary School.
Instruction in the modes of written expression appropriate for a secondary school curriculum and study of composition teaching methods.

711. (ELE) Children's Literature in the Elementary School.
A survey of literature appropriate for children, preschool through junior high school. (Open only to students who have had no previous course in children's literature.)

712. (ELE) Guilding the Reading of Children.

746, 747, 748. Internship in Teaching English.

765. Applied Project in English Education.

899. Research Seminar in English Education.

930. Thesis in English Education.

960, 961, 962. Research in English Education.

963. Critique of Educational Literature in English Education.

970. Internship in English Education.

EXCEPTIONAL CHILDREN (EXC)

Majors are offered in the following areas: Early Childhood Special Education, Emotional Disturbance, Learning Disorders, Mental Retardation, Multiple Handicapped and Severely and Profoundly Handicapped. Hospital-Homebound area of study is for certification only. For specific requirements for each major, contact the program heads.

600. Special Problems in Exceptional Children.

699. Research Seminar in Exceptional Children.

700. Introduction to Exceptional Children.
Prerequisite: EPY 304.
Nature, cause, and treatment of children's disabilities and their influence on emotional, social, educational, and vocational adjustment. Special services required for exceptional children to develop to the maximum capacities.

701. Principles of Assessments of Exceptional Children.
Prerequisite: EXC 700 or permission of instructor.
Study of standardized and informal evaluative procedures for use with exceptional children. Experience in formal and informal diagnostic techniques and in reporting.

704. Nature of Mental Retardation.
Prerequisite: EXC 700.
Description of types, nature, and causes of mental retardation and implications for adjustment and education. Problems of parental adjustment, diagnosis, treatment, and educational modification.

705. Problems in Teaching Exceptional Children.

706. Teaching the Mentally Retarded.
Prerequisite: EXC 704, EXC 708.
The study, selection, and preparation of suitable curricular materials; methods used in teaching the skills which mentally retarded children need.

707. Secondary School Programming for the Mentally Retarded.
Prerequisite: EXC 701, 704, 708.
Study will emphasize the needs of the adolescent and young adult mentally retarded; preoccupational and related experiences, home and family living, civic responsibility, and community living. The relationship of the teacher as a counselor and the utilization of community resources will also be stressed.

708. Curriculum for the Educable Mentally Retarded.
Prerequisite: EXC 704.
Study of various curricular approaches to the education of the educable mentally retarded; i.e., subject matter, academic development, occupational education. Throughout, curricular programs will be considered in reference to psychological and cultural determinants in the mentally retarded and attainments necessary for adequate function in society.

709ADEMRS. Practicum in Special Education.
2–15 hours.

715. Nature of Physical Limitations.
Prerequisite: EXC 700.
Nature and causes of physical disabilities. Contributions of various therapies, equipment, and services of physical therapy, occupational therapy, speech correction, and play therapy.

716. Teaching Physically Limited Children.
Prerequisite: Four courses in education plus EXC 715.
The study, selection, and preparation of suitable materials and modifications of methodology to meet the needs of motor handicapped children.

720. Behavioral Disorders in the Classroom.
Prerequisite: EXC 700.
Considers the nature of emotional and social disturbances and effects on learning and educational adjustment. Basic alterations in school programs are discussed.

721. Teaching Procedures for Disturbed Children.
Prerequisite: EXC 700, consent of instructor.
Planning and implementing adaptations in the educational programs for disturbed children. Emphasizes intervention techniques and behavior management, educational diagnosis, therapeutic and remedial teaching, and the relationship process.

730. Advanced Curriculum and Methods for the Mental Retarded.
An understanding of various selected theories of learning, human growth and development, and

intellectual development as they relate to the development of curriculum instructional procedures and educational assessment for the mentally retarded. Further development of skills in material, modification of existing materials, and curriculum development for achievement of specific objectives. Further development of basic instructional competencies.

731. Education of Exceptional Children.
Considers the nature of emotional and social disturbances and effects on learning and educational adjustments. Basic alterations in school programs are: (1) to recognize characteristics of disturbed children in classrooms; (2) to develop techniques for objectively observing and describing behavior; (3) to be familiar with techniques for modifications on behavior and self concepts.

740. The Family and the Exceptional Child.
Prerequisite: Graduate standing in the College of Education and/or permission of instructor.
A study of the interactions among exceptional children and their families. Dynamics of family interaction, parental attitudes, parental reactions to children.

741. Behavior Management of Exceptional Children.
Application of psychological techniques of behavioral management. Emphasizes current research in behavior modification and social influence techniques as they are applied to exceptional children.

746C, 747C, 748C. Internship in Hospital/Homebound Teaching.

746D, 747D, 748D. Internship in Teaching the Learning Disabled.

746E, 747E, 748E. Internship in Teaching the Emotionally Disturbed.

746M, 747M, 748M. Internship in Teaching the Physically Limited.

746R, 747R, 748R. Internship in Teaching the Mentally Retarded.

746S, 747S, 748S. Internship in Teaching the Severely Mentally Retarded.

765. Applied Project in Exceptional Children.

795. (CFD) Teaching the Severely Mentally Retarded.

800. Children with Learning Disorders.
Prerequisite: Permission of the instructor.
Analysis of physical, behavioral, and educational problems of children which result from central processing dysfunctions. Discussion of current theories and practices for educational diagnosis and remediation.

805. Education of Children with Learning Disorders.
Prerequisite: EXC 800 and permission of instructor.
Administrative provisions, curriculum adaptations, and techniques of intervention and circumvention appropriate for children with disorders in one or more of the basic neuropsychological processes involved in learning to understand and/or use spoken or written languages. Comparative analyses of current theories accompanied by application in practicum and/or internship experience.

810. Learning Characteristics of Mental Retardation.
A survey of the research literature dealing with the learning characteristics of the mentally retarded, with implications for educational practice.

831. Research in Emotional Disturbance.
Prerequisite: Consent of instructor.
Research oriented seminar for advanced graduate students. Course will focus on the major theoretical approaches which attempt to explain child variance. Other related research will also be considered.

837. Analyses of Basic Research: Mental Retardation.
Prerequisite: Consent of instructor.
Study and evaluation of research in mental retardation. Applications to educational, psychological and vocational rehabilitation procedures.

838. Analyses of Program and Clinical Research: Mental Retardation.
Prerequisite: Consent of instructor.
Study and evaluation of program and clinical research in mental retardation. Applications to educational, psychological and vocational rehabilitation procedures.

899. Research Seminar in Exceptional Children.

901. Problems of the Multiple Handicapped.
Prerequisite: EXC 704, 715, PSY 616.
Planning and implementing programs for the total education, care, and treatment of mentally retarded and physically handicapped children.

930. Thesis in Exceptional Children. 5–50 hours.

941. Administration and Supervision of Special Education.
Prerequisite: Permission of instructor.
Study of the needs of exceptional children with

particular emphasis on planning and implementing comprehensive special education programs.

960, 961, 962. Research in Exceptional Children.

963. Critique of Educational Literature in Exceptional Children.

964. Critique of Educational Literature: Disturbed Children.

970, 971, 972. Internship in Public Schools: Mental Retardation.

973, 974, 975. Internship in Public Schools: Motor Handicapped. 5 hours each.
Prerequisite: Permission of instructor.
A study-work program; class or conference study of problems encountered by the intern with the remainder of time in application of principles in public schools.

980, 981, 982. Practicum in Exceptional Children.

987, 988, 989. Internship in Coordination of Special Education Programs. 5 hours each.
Prerequisite: Consent of instructor.
Supervised participation in coordinating a public school or residential school program of special education.

990, 991, 992. Internship in State Supervision of Special Education Programs. 5 hours each.
Prerequisite: Consent of instructor.
Supervised participation in a state department of education.

993. Internship: College Teaching in Exceptional Children.

994, 995, 996. Internship: Supervision of Teachers of Exceptional Children. 5 hours each.

FOREIGN LANGUAGE EDUCATION (EFL)

600. Special Problems in Foreign Language Education.

699. Research Seminar in Foreign Language Education.

705. Teaching for Cross Cultural Understanding.
Lecture and discussion in areas of cross-cultural analysis, attitudes toward other cultures, strategies for teaching culture in the language classroom and the testing of cultural insights.

707F. (FR) Applied French Linguistics.
(Morain)
The application of the science of linguistics to the methodology of teaching French.

707S. (SP) Applied Spanish Linguistics.
(Kalivoda)
The application of the science of linguistics to the methodology of teaching Spanish.

708. Curriculum in Foreign Language Education.

746, 747, 748. Internship in Teaching Foreign Languages.

765. Applied Project in Foreign Language Education.

781. (FR, GER, SP) Problems of Teaching Romance Languages.
Prerequisite: FR or SP 210–211 or 15 hours of education in addition to FR or SP 104.
History of method, psychology of language, learning, values, objectives, teacher's library, technique of oral work, pedagogy of phonetics applied to grammar, pedagogy of vocabulary and reading. Visual aids and realia, individual differences, tests, and measurements. Evaluation of texts, course content.

899. Research Seminar in Foreign Language Education.

930. Thesis in Foreign Language Education.

960. Educational Research in Foreign Language Education.

963. Critique of Educational Literature in Foreign Language Education.

970. Internship in Foreign Language Education.

HEALTH OCCUPATIONS EDUCATION (EHO)

600. Special Problems in Health Occupations Education.

699. Research Seminar in Health Occupations Education.

700. Performance Specification in Health Occupations Education.
Study of current and emerging roles in the health field and methods of identifying and specifying performance requirements for specific jobs as a basis for instructional planning.

701. Instructional Strategies for Health Occupations Education.
Study of methods and techniques for optimizing learning conditions for students of varying ability levels in community, clinical, laboratory and classroom settings.

702. Health Occupations Program Design.
Study of instructional designs and factors impinging upon selection and development of an appropriate design for a health occupations curriculum.

703. Instructional Planning for Health Occupations Education.
Systems technology as applied to selecting and organizing course content, maximizing media utilization, managing the learning environment and assessing student achievement in classroom, laboratory, and clinical settings.

705. Problems of Teaching Health Occupations.

746, 747, 748. Internship in Teaching Health Occupations.

765. Applied Project in Health Occupations Education.

HIGHER EDUCATION (EHI)

765. Applied Project in Higher Education.

800. The Development and Scope of Higher Education. (Sorrells)
A broad survey of higher education emphasizing recent developments in American higher education.

802. The Two Year College. (Young)
Purposes, policies, and programs of two-year colleges are explored. Opportunity provided for individual and group projects.

820. Institutional Research. (Fincher)
This course is designed to develop competency and skills in the specialized area of data collection and interpretation of institutional studies and their implication in higher education.

830. The Law and Higher Education. (Young)
A study of the legal aspects of higher education through pertinent court decisions affecting the administration of the institution, faculty, staff, and students.

840. Financial Aspects of Higher Education. (Feltner)
A study of the financial aspects of higher education: need for current and capital funds, sources of funds, financial policies, economies in institutional operations, college and university development, budgeting, and resource allocation.

889.A-G,JKM. Seminar in Higher Education. 1 hour each.
Graduate seminar on topics of general and special interest in higher education.

899. Research Seminar in Higher Education.

900. Organization and Government in Higher Education. (Feltner)
Administrative theory, diversity of types of policies, control and organizational patterns of public and private institutions, and an investigation of current literature and practices and their implications for higher education.

901. Programs and Instructional Processes in Higher Education. (Fincher)
A study of curriculum development in colleges and universities; general education and specialization; resources for instruction; instructional processes; course planning.

902. Critical Issues and Concepts of Change in Higher Education. (Sorrells)
A study of critical problems and issues facing higher educational institutions today, emphasizing the processes of change which may result in improved administrative leadership and practice.

930. Thesis in Higher Education.

970. Internship. 5–15 hours. (Sorrells)
Prerequisite: Other required coursework.
A study-work program; class or conference study of problems encountered by the intern with remainder of time spent in application of principles to regular internship position.

HOME ECONOMICS EDUCATION (EHE)

600. Special Problems in Home Economics Education.

701. Methods of Teaching Home and Personal Management.

705. Problems of Teaching Home Economics.

708. Curriculum Planning in Home Economics.

746, 747, 748. Internship in Teaching Home Economics Education.

760. Special Problems in Nutrition Education.

765. Applied Project in Home Economics Education.

(For other course offerings in home economics education, see listings under Vocational Education.)

INDUSTRIAL ARTS (EIA)

600. Special Problems in Industrial Arts Education.

702. Advanced Metal Technology.
Prerequisite: EIA 310.
Individual problems in advanced metal technology.

704. Advanced Electronics Technology.
Prerequisite: EIA 320.
Individual problems in advanced electronics.

705. Problems of Teaching Industrial Arts.

706. Drafting.
Prerequisite: EIA 326.
Individual problems in advanced drafting.

710. Principles of Industrial Arts Education.
History, principles, function, organization, and evaluation of industrial arts education.

711. Organization of Subject Matter in Industrial Arts.
Prerequisite: Four courses in education including EIA 102 and consent of instructor.
Selection, organization, presentation and interpretation of subject matter in industrial arts. Students will work out job plans, instruction sheets, and plan course content.

712. Administration of Industrial Arts.
Prerequisite: Four courses in education.
Interpretation of the industrial arts curriculum in terms of school and community needs. Organization and reorganization of shop programs. Cost accounting of materials, equipment, housing and supplies, care and repair of tools and equipment. The duties of the industrial arts administrator and supervisor. Shop planning and layouts.

713. Special Problems in Industrial Arts.
Prerequisite: Four courses in education including EIA 102 and 320.
Improvement of curriculum and teaching procedures through intensive training in particular area of interest.

714. Seminar in Industrial Arts and Handicrafts.
Advanced study in industrial arts and handicraft. Research and experimentation in selected areas of the industrial arts.

715. Industrial Design for Technical Courses.
The study and practice of Industrial design as it relates to improvement of industrial arts concepts in technical courses.

720. (EAV) Photography in Instruction.

721. (EAV) Graphic Technology.

722. (EAV) Advanced Graphic-Photographic Techniques.

765. Applied Projects in Industrial Arts.

LIBRARY EDUCATION (ELE)

600. Special Problems in Library Education.

602. Reference Materials and Services.
Nature of reference services and knowledge of all types of materials: content, evaluation, organization and utilization.

603. Introduction to Cataloging and Classification.
Aims and techniques of cataloging, classification, storage and retrieval of media. Practice in analyzing, classifying, cataloging and organizing all types of media.

604. Administration of a Library Media Center.
Prerequisite: ELE 501.
Aims and program of the library media center, techniques and procedures of library media center operation.

700. (EAV) Utilization of Educational Media.

701. Building Library Media Collections.
A study of media selection aids, book reviewing, reading lists, publishers, and publishing; standards useful in building and balancing a collection; methods of reading guidance.

702. Library Media Center Programs.
Study of the organization, services, functions and administration of the library media center. Emphasis on the role of the library media center in the instructional program of the school. A study of standards for evaluating school library resources and services for administrators, supervisors, and librarians.

704. Data Processing in Libraries.
An introduction to the basic principles of system analysis and design; the application of automation to the library functions of acquisition, organization, and circulation of materials in all media; the application of automation to information storage, retrieval, and dissemination.

706. Information Center Management.
Exploration in depth into the information transfer processes through the operation of information centers and libraries; intensive study of the parts of information centers and the techniques used; state-of-the-art and expectations for the future.

711. (EEN) Children's Literature in the Elementary School.

712. (EEN) Guiding the Reading of Children.
Study of the development of children's literature to the present time; includes principles and techniques in guidance of children's reading interest; selection of books for elementary school libraries. Extensive reading and evaluation of children's books.

715. Libraries in the Social Order.
An introduction to the professional principles and practices of librarianship, including education, philosophy, ethics, responsibilities, professional organizations, and the literature of the profession; the role of libraries in society; types of libraries and library services.

716. Guiding the Reading of Young Adults.
Study of current investigations and research concerning interests and habits of young adults; a critical study of standard and current books with aids and criteria for selection; the use of books for curricular and leisure needs; extensive examination and reading of books and materials.

717A. Guides to Subject Fields. 3 hours.
Prerequisite: ELE 402/602.
Survey of the major guides to the various subject fields; humanities, social sciences.

717B. Subject Bibliography: Humanities. 3 hours.
Prerequisite: ELE 402/602.
Survey and evaluation of major bibliographies and information resources in philosophy, religion, literature, and fine arts.

717C. Subject Bibliography: Social Sciences. 3 hours.
Prerequisite: ELE 402/602.
Survey and evaluation of major bibliographies and information resources in history, political science, business and economics, sociology and anthropology, and education.

717D. Subject Bibliography: The Sciences. 3 hours.
Prerequisite: ELE 402/602.
Survey and evaluation of major bibliographies and information resources in the pure and applied sciences.

717E. Government Documents. 3 hours.
Emphasizes nature and reference use of United States government documents with brief attention given to state and international documents.

717F. Alternative Reference Sources and Services. 3 hours.
Prerequisite: ELE 402/602 and at least one from ELE 717A-E.
A study of specialized forms of reference resources: vertical file materials; non-print media; other library holdings; and community resources.

718. School Library Supervision.
Survey of leadership service for the development, improvement, evaluation, and supervision of school libraries; emphasis on methods for organization and coordination of the total school library media program within an educational system; methods and problems of supervision, human relations, public relations, and communication. Designed to train selected librarians to be local and regional supervisors of library media programs.

719. History of Books and Printing.
Development of the book from the earliest times to the present. Appraisal of the physical book and its relationship to social and cultural developments. Includes history of the alphabet, early writing materials, manuscripts, invention and spread of printing and evolution of book production.

724. Advanced Classification and Cataloging.
A continuation of ELE 603. Attention is given to the theory of classification, comparison of classification systems, cataloging of special types of materials including audiovisual materials; introduction to the library of Congress System; methods of organizing centralized cataloging units. Orientation is given to modern methods of machine organization and to the use of machines in processing.

725. Library Systems in the United States.
Development and roles of the several types of library systems (academic, public, special, etc.) in the United States. Includes study of history and development, organizational patterns, personnel, finances, services, and trends of each type. Special attention is given to the correlation of services among all types of libraries.

760. Research in Library Education.

765. Applied Project in Library Education.

770. Internship in Library Education.
Practice work in selected school library media centers under the supervision of staff and qualified personnel in school. Required of students without previous school library experience.

MATHEMATICS EDUCATION (EMT)

600. Problem in Mathematics Education.

605. Diagnostic Teaching of Arithmetic.
Application of psychological theories, learning

theory, and educational theories to diagnostic strategies of teaching elementary and middle school mathematics.

635. History of Mathematics. 3 hours.
Prerequisite: MAT 254.
A historical development of selected topics in mathematics. The organization of the course is along lines of mathematics content, but the motivational and pedagogical relevance of such historical insights are emphasized.

642. Mathematics Methods in Early Childhood Education.
Instructional procedures and materials for teaching mathematics in the early childhood grades.

699. Seminar in Mathematics Education.

701. Teaching Mathematics in the Elementary School.
Instructional procedures, materials, and evaluation in teaching modern mathematics in the elementary school.

705. Problems of Teaching Secondary School Mathematics.

707. Mathematics Curriculum in the Elementary School.
Survey of the mathematics curriculum of the elementary school, with special emphasis on contemporary programs, issues, and trends.

708. Curriculum Planning in Mathematics Education.

715. Contemporary General Mathematics.
An approach to mathematics curriculum, teaching procedures, and evaluation through an examination of mathematics content with emphasis on the function concept, applications, and problem solving.

746, 747, 748. Internship in Teaching Mathematics.

746E, 747E, 748E. Internship in Teaching Elementary Mathematics.

746S, 747S, 748S. Internship in Teaching Secondary Mathematics.

765. Applied Project in Mathematics Education.

805. Theoretical Bases of Mathematics Instruction.
Prerequisite: EMT 705, EMT 708, and consent of the instructor.
Advanced study of some theoretical bases of mathematics instruction, including philosophical and psychological bases, the study of instructional theories from the field of mathematics education, and the research that supports these theories.

808. Advanced Study of Mathematics Curriculum.
Prerequisite: EMT 705, EMT 708, and consent of the instructor.
Advanced study of mathematics curriculum; its content, scope, and sequence; the development and evaluation of mathematics programs. Emphasis is upon the identification of issues and problems for disciplined inquiry.

899. Research Seminar in Mathematics Education.

930. Thesis in Mathematics Education.

960, 961, 962. Educational Research in Mathematics Education.

963. Critique of Educational Literature in Mathematics Education.

970, 971, 972. Internship in Mathematics Education.

980, 981, 982. Practicum in Mathematics Education.

MUSIC EDUCATION (EMU)

600. Special Problem in Music Education.

705. Problems in Teaching Music Education.

746, 747, 748. Internship in Teaching Music Education.

765. Applied Project in Music Education.

899. Research Seminar in Music Education.

930. Thesis in Music Education.

960. Educational Research in Music Education.

963. Critique of Educational Literature in Music Education.

PHYSICAL EDUCATION (PED)

600. Special Problem.

642. Movement Education for the Young Child
The course was designed to meet the needs of students interested in the education of young children. It is concerned with the importance of the role of body movement in the child's conceptualization of his environment.

661. Adapted Physical Education.
Emphasis on developing an understanding of those parameters encompassing theory and practice in physical education for special populations.

708. Curriculum Planning in Physical Education.

713. Administration of Physical Education in the School Program.
Program planning; budgeting; selection, care and maintenance of equipment and facilities; personnel; and other administrative problems; evaluation of physical education in the school program.

714. Current Problems in Health, Physical Education and Recreation.
Problems met in a comprehensive program of health, physical education, or in recreation in the school and community. Special emphasis given to problems in areas of students' interests.

715. (HED, REC, SED) Research Methods in Health, Physical Education and Recreation.
The application of research methods to health, physical education and recreation with experience in developing techniques of gathering, analyzing, and reporting data.

716. Advanced Measurements in Physical Education.
Prerequisite: PED 383 or equivalent.
Current tests in physical education; the principles of test construction relative to skills, knowledge, and behavior tests; tools for evaluation of tests; and the use of laboratory instruments in performance measurement.

717. History of Physical Education.
Prerequisite: PED 372 or equivalent.
Greek and Roman concepts of physical education, education and physical education in the Renaissance and Reformation, historic events of European and American physical education and comparative programs of physical education.

721. Motor Learning in Physical Education.
Analysis and application of psychological factors and theories of learning with special reference to learning and retention of motor skills, motor performance, perception, motivation, effects of practice, and kinesthesis.

722. Aspects of Sports in American Culture.
An analysis of the place of sport in American culture. A study of the historical influences on sport of economics, politics, nationalism, curriculum and methods of instruction, professional preparation, dance, leisure, and amateur and professional status.

765. Applied Project in Physical Education.

899. Research Seminar.

901. Foundations in Health and Physical Education.
Prerequisite: PED 372, 713 or equivalent.
A systematic review of the foundations of physical education: biological, sociological, psychological, and philosophical.

904. Scientific Aspects of Exercise.
Prerequisite: Undergraduate major in physical education or consent of instructor.
A consideration of the effect of exercise on the functions of the organic systems of the body with particular emphasis on the physiological changes occurring during exercise.

906. Analysis of Motor Skills.
Prerequisite: PED 360, 361, 715 or equivalent.
Analysis of performance of motor skills based on laws and principles of mechanics.

916. Case Studies in Physical Education and Athletics.
Prerequisite: Undergraduate major in physical education or consent of instructor.
Problems dealing with the administration and teaching of physical education and athletics are studied by using the case method.

930. Thesis in Physical Education. 5–50 hours.

960, 961, 962. Educational Research in Physical Education.

963. Critique of Educational Literature in Physical Education.

Health Education (HED)

600. Special Problems.

604. Introduction to the Study of Disease. 3 hours.
An introduction to the principles, uses, techniques, and language of epidemiology and the epidemiological method, through lectures and discussions of past and current health problems; to provide students with opportunities to use these principles and techniques in the classification, tabulation, description, and analysis of data. The case study approach is utilized as a practical examination of epidemiology.

605. Health Data Analysis. 3 hours.
Prerequisite: An introductory statistics course.
Introduction to public health statistical procedures, including historical aspects, sources of health data and their collection and classification, demographic techniques, vital statistics, rate standardization, graphic presentations, data collection methodology, analysis of health data.

706. Teacher Preparation in Human Sexuality.
Theory and practice of family life and sex education, basic issues, philosophy and guiding principles; legal implications; needs, justification and objectives; curriculum critique; content knowledge; resource materials; acceptable methods of approach to controversial topics; microteaching and video tape evaluation stressing responsible classroom techniques appropriate for teaching human sexuality at various levels grades 1–12.

711. Organization and Administration of School Health Programs.
The organization and administration of the total school health program is presented. Suggestions of a practical nurse are presented which will enable administrators, faculty and staff to provide a quality school health program.

712. Foundations of Health Education.
History, philosophy and principles directed to a working philosophy and the processes of health education. Emphasis on both school and public health education.

713. Community Health.
An understanding of the international, national, state and local organizational relationships of major health agencies and related professional organizations with emphasis on contributing health resources.

715. (PED, REC, SED) Research Methods in Health, Physical Education and Recreation.

716. Critical Issues in Health and Safety.
Drug abuse, smoking, delinquency, suicide, and others. Emphasis on the etiology of health problems and the role of parents, teachers, administrators, and the community in meeting and preventing health problems.

721. The Effects of Alcohol and Drugs.
Social, moral, psychological, and physiological effects of beverage alcohol and drug use on the individual, family, and community.

722. Health Care Delivery Systems.
Prerequisite: HED 301 and 370.
An in-depth study of the structure, role, and function of existing components of our health care delivery system, and an analysis of future trends of health care delivery systems.

723. Patient Education. 3 hours.
Prerequisite: HED 171 or 370.
An in-depth study of comprehensive patient education programs. Emphasis on patient education program development, implementation and evaluation as related to the patient management of illness, and preventive health care.

746, 747, 748. Internship in Teaching Health Education.

765. Applied Project in Health Education.

Park and Recreation Administration (REC)

600. Special Problems.

699. Research Seminar in Park and Recreation Administration.

712. Problems in School and Community Recreation.
Problems of school and community recreation pertaining to philosophy, program, facilities and leadership. This course will consider the school camp program.

715. (PED, HED, SED) Research Methods in Health, Physical Education and Recreation.

730. Camping Administration.
Prerequisite: REC 386 or organized camp experience.
Organization, administration, staffing, and program planning for different types of camps.

731. Outdoor Recreation.
The organization and administration of outdoor recreation in local, county, and federal agencies with emphasis on objectives, philosophy, problems, trends, and methods of operation.

732. The Role of Government in Parks and Recreation.
National and state government park and recreation policies and their impact on community recreation programs.

734. Administration of Public Recreation Department.
Prerequisite: REC 712.
Methods of organizing and administering recreation departments at the local level.

735. Park Management.
An introduction to the management, operation, and development of public parks and open spaces.

736. Introduction to Recreation for the Ill and Handicapped.
Prerequisite: REC 712 or consent of instructor.
Therapeutic recreation services in the treatment and rehabilitation of persons with physical, emotional, and intellectual disorders.

737. Recreation for the Mentally Retarded.
Prerequisite: REC 736 or EXC 705.
The therapeutic use of recreational activities as applied to the mentally retarded.

738. Recreation and Aging.
Prerequisite: REC 712 and SOC 655.
Recreation program services for the aging and aged in both community and institutional settings.

746, 747, 748. Internship in Teaching Park and Recreation Administration.

765. Applied Project in Recreation.

899. Research Seminar.

930. Thesis in Recreation. 5–50 hours.

933. Trends in Recreation.
A critical analysis of the role of recreation in modern society with attention given to the current status and implications for future trends.

960, 961, 962. Educational Research in Recreation.

963. Critique of Educational Literature in Recreation.

980, 981. Practicum.

Safety Education (SED)

600. Special Problems in Safety Education.

645. Industrial Safety.
Introduction to the specific areas and the broad scope in methods materials, and problems in Industrial Safety programming with special emphasis on organization and implementation of accident prevention and control techniques.

705. Problems of Teaching Health and Safety.

715. (PED, HED, REC) Research Methods in Health, Physical Education and Recreation.

744. Safety in Sports and Recreation.
Philosophy of sports safety: human and environmental factors and their interrelationships in sports injury and its control; risk-taking and decision solution strategies; application of accident prevention and injury control to selected sports; contributions of sports medicine to safety.

746, 747, 748. Internship in Teaching Health and Safety.

765. Applied Project in Safety Education.

775. Foundations of Safety Education.
An introduction to the social significance of the accident problem and the nature of the accident prevention program.

776. Principles of Traffic Safety.
Prerequisite: SED 775 or consent of instructor.
Analysis of traffic accidents and traffic safety practices with psychological testing and use of simulation in the development of knowledge concerning the overall driving situation.

777. Practices in Driver Education.
Prerequisite: SED 776.
The teaching of driving with dual-control automobiles, development of approved driving attitudes and habits, and the administration of high school programs of driver education.

779. Fundamentals of Fire Prevention.
The purpose of this course is to develop an understanding of the public and private aspects of Fire Prevention. The course provides an overview of the history and philosophy of Fire Prevention, as well as the function and procedures for an ongoing program.

790. Multiple Car Off-Street Driving Ranges and Simulation in Traffic.
Prerequisite: SED 777.
Preparation to meet the traffic education needs of schools and communities. Laboratory experience in teaching beginners to drive on range in simular, multiuse simulation and use of multiphase program.

791. Administration of School Transportation and Safety Education.
Concentrated study of requirements of local, state and federal regulations pertaining to school transportation and safety, driver and traffic programs as they affect administrators, directors and supervisors.

792. Behavioral Factors in Traffic Education.
Concentrated study of behavioral factors related to health and driving. Special emphasis on effect of attitudes, motivations and adjustments. Investigation of principles and methods of identifying, understanding, and modifying unsatisfactory attitudes and behavior. Review of current relevant research.

READING EDUCATION (ERD)

600. Special Problems in Reading Education.

601. The Teaching of Reading.
A systematic coverage of the teaching of reading, including methods, techniques and materials, from first through twelfth grades.

602. The Analysis and Correction of Reading Disabilities.
Prerequisite: ERD 601 or permission of instructor.
Causes of reading disability; methods of diagnosis; procedures and materials for corrective work, group and individual.

603. Teaching Reading in the Secondary School.
The development of reading skills needed by students in grades 7–12 for success in school subjects.

604. Adult Literacy—Basic Reading Needs.
An examination of the causal factors contributing to adult illiteracy and of those methods and materials appropriate for teaching adults to read.

605. Materials for Reading Instruction.
An in-depth examination of reading materials from both the theoretical and practical point of view.

642. Reading and Written Discourse for Early Childhood Education.

746, 747, 748. Internship in Teaching Reading Education.

750. (ECS) Supervision of the Reading Program.
Prerequisite: ECS 722
Principles of supervising a total school reading program. Study of inservice reading education, reading curriculum design, and systematic coverage of innovative school reading programs, as well as methods of including reading instruction in all subject areas.

765. Applied Project in Reading Education.

817. Psychology of Reading.
Prerequisite: ERD 601; recommended, ERD 602.
Psychological correlates of reading ability and disability; psychological bases for instructional methods and materials.

899. Research Seminar in Reading Education.

900. Trends and Practices in the Teaching of Reading.

901. (LIN) Linguistics and Reading.
An introduction to theories concerning the origin, development, and history of languages as they relate to reading.

902. Advanced Diagnosis and Treatment of Reading Difficulties.
Analysis, administration, and interpretation of clinical reading and reading related tests and diagnostic instruments. Analysis, selection, and implementation of clinical teaching methods. Prescription of methods and materials for severely disabled reading cases.

930. Thesis in Reading Education. 5–50 hours.

960, 961, 962. Educational Research in Reading Education.

963. Critique of Educational Literature in Reading Education.

970, 971, 972. Internship in Reading Education.

980, 981, 982. Practicum in Reading Education.

SCHOOL SOCIAL WORK (ESW)

600. Special Problems in School Social work.

746, 747. Internship in Teaching School Social Work.

765. Applied Project in School Social Work.

963. Critique of Educational Literature in School Social Work.

970, 971. Internship in School Social Work.

980, 981. Practicum in School Social Work.

SCIENCE EDUCATION (ESC)

600. Special Problems in Science Education.

642. Science for Early Childhood Education.

699. Seminar in Science Education.

702. Teaching Science in the Elementary School.

705. Problems of Teaching—Secondary Science.

708. Curriculum Planning in Science Education.

746E, 747E, 748E. Internship in Teaching Elementary Science Education.

746S, 747S, 748S. Internship in Teaching Secondary Science Education.

765. Applied Project in Science Education.

820. Science Supervision.

899. Research Seminar in Science Education.

901. Problems of Teaching College Science.

902. History and Theory of Science Education.

930. Thesis in Science Education. 5–50 hours.

960, 961, 962. Research in Science Education.

963. Critique of Educational Literature in Science Education.

970, 971, 972. Internship in Science Education.

SOCIAL SCIENCE EDUCATION (ESS)

600. Special Problems in Social Science Education.

620. Social Science Education and Environmental Problems.
Prerequisite: T-4 certification.
A field study of land-use problems of rural and urban Georgia relating various environmental considerations to social sciences content and methods.

642. Social Studies for the Young Child.
An examination and application of social studies curriculum models relevant to instruction for preschool and primary level children.

699. Research Seminar in Social Science Education.

703. Teaching Social Studies in the Elementary School.
The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to elementary social studies education.

705. Problems of Teaching Secondary Social Sciences.

708. Curriculum Planning in Social Sciences.

746E, 747E, 748E. Internship in Teaching Elementary Social Science Education.

746S, 747S, 748S. Internship in Teaching Secondary Social Science Education.

765. Applied Project in Social Science Education.

899. Research Seminar in Social Science Education.

930. Thesis in Social Science Education. 5–50 hours.

960, 961, 962. Educational Research in Social Science Education.

963. Critique of Educational Literature in Social Science Education.

970, 971, 972. Internship in Social Science Education.

See also **GGY 700, 701, 702, 703.)**

SPEECH EDUCATION (ESP)

600. Special Problems in Speech Education.

705. Problems of Teaching Speech.

746, 747, 748. Internship in Teaching Speech.

765. Applied Project in Speech Education.

793. (SPC) Speech for the Elementary Teacher.

899. Research Seminar in Speech Education.

930. Thesis in Speech Education. 5–50 hours.

960. Educational Research in Speech Education.

963. Critique of Educational Literature in Speech Education.

970. Internship in Speech Education.

SPEECH PATHOLOGY AND AUDIOLOGY (SPA)

600. Special Problems in Speech Pathology and Audiology.

612. Anatomy and Physiology of the Speech Mechanism. 3 hours.
A study of the anatomy and physiology of breathing, phonation, resonance, and articulation for speech; a study of the physical phenomena in voice and speech.

613. Anatomy and Physiology of the Hearing Mechanism. 3 hours.
Prerequisite: SPA 310.
Anatomy and physiology of outer, middle and inner ear structures; auditory pathways leading to and including the brain stem; and the auditory projection areas in the cortex.

614. Speech and Hearing Science.
The physical properties of sound; basic psychoacoustics; the human speech mechanism as a sound source and resonator; acoustic properties of vowels, consonants; sound spectrum relationships of vocal pitch, loudness, and voice quality; basic instrumentation.

650. (PSY) Language Development.
Prerequisite: EPY 304 or equivalent and PSY 690.
Processes of reception, integration, and expression of symbolic information; nature and effects of linguistic symbolism on personal development and behavior; and language development norms.

651. Speech and Language Problems in the Classroom.
A consideration of speech and language problems on the basis of classroom involvement. Basic information in speech and language development and interfering factors.

670. Diagnosis in Speech and Language Pathology.
The theory, administration, and interpretation of tests and diagnostic procedures used in determining the nature, etiology of and therapy for speech, attention is given to non-audiometric evaluation of hearing; examiniation of speech mechanism, special abilities related to speech, and to an understanding of how results of psychological tests are related to speech problems.

671. Introduction to Audiology.
The basic psychophysics of hearing, pathologies causing hearing loss, and theory of hearing evaluations. A survey of educational, psychological and medical rehabilitation for persons with a loss. Practice in pure tone and speech audiometry.

673. Psychology of Deafness.
A study of the developmental, adjustment and educational needs of the deaf including mental development, personality development, emotional adjustment and social maturity; the aptitudes, special abilities and associated handicaps of the deaf.

674. Articulatory Disorders of Speech.
Etiology, rationale and methods of therapy for functional and organic disorders of voice and articulation. Development of a therapeutic program and lesson plans.

675. Voice Disorders. 3 hours.
Pitch, loudness, and quality disorders of voice due to functional and organic causes. Etiology and therapies with supervised laboratory experiences.

676. Stuttering: Etiology and Therapy. 3 hours.
Major theories of causation of stuttering, whether based in neuro-physiological, emotional, or learning factors. The development of an integrated therapy based on modern research.

677. Clinical Audiology I. 3 hours.
Prerequisite: SPA 310, 671.
Procedures for measuring aspects of hearing, including simple, complex, threshold suprathreshold, pure tone and speech audiometric stimuli.

678. Clinical Audiology II. 3 hours.
The study of the rationale and procedures of advanced tests used for differentiating between types of auditory disorders.

679. Speech Audiometry and Hearing Aids. 3 hours.
A study of the theory and practice of using speech materials in hearing evaluations and hearing aid selections; the design and physical characteristics of hearing aids.

699. Research Seminar in Speech Pathology and Audiology.

701, 702, 703, 704, 705, 706, 707, 708, 709, 710. Clinical Practice in Speech Pathology. 2 hours each.
Supervised clinical practice in speech pathology including functional and organic disorders. Speech problems provided for observations and clinical practice include articulation, voice, delayed speech, stuttering and aphasia. In addition, speech problems associated with cleft palate, cerebral palsy and hearing loss are included in the therapy program. As the student progresses in the program, the level of case severity and responsibility will increase.

711, 712, 713, 714, 715, 716, 717, 718, 719, 720. Clincial Practice in Audiology. 2 hours each.
Clinical and field experience in audiology including neonatal testing, pediatric audiology, public school screening, work with the pre-school deaf, auditory training and speech reading, noise measurements and hearing conservations, and geriatric audiology.

734. Classroom Problems in Speech Correction.
Prerequisite: Four courses in education.
Problems of defective speech, common etiologies, identification of speech defects, and the role of the teacher in referral, examiniation, and correction. Clinical demonstrations in cooperation with the Atlanta Speech School (Atlanta Area Teacher Education Service only).

738. Program Administration in Speech Pathology. 3 hours.
A study of methods for finding, selecting, and scheduling speech cases in schools and clinics. The organizational and administrative problems in keeping records, reporting, and coordinating speech pathology activities. Basic plans for various sizes of schools and clinics.

739. Advanced Clinical Practice in Speech Pathology.
Prerequisite: Six courses in speech correction and 200 clock hours of supervised clinical practices.
Work with complex and difficult problems of speech combined with intensive reading, conferences, and discussions.

746A, 747A, 748A. Internship in Speech Pathology.

746B, 747B, 748B. Internship in Audiology.

765. Applied Project in Speech Pathology and Audiology.

775. Individual Study in Speech Pathology.
Adaptation of the speech pathology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the chairman of speech pathology.

776. Individual Study in Speech Pathology.
Continuation of SPA 775, but content must be different.

778. Speech Reading and Auditory Training. 3 hours.
Prerequisite: SPA 671.
Processes and problems of oral communication by the hearing handicapped; procedures for improving communication by means of speech reading and auditory training; supervised clinical practice in individual and group therapy.

779. Auditory Rehabilitation of Children.
A study of the theories and procedures used in the rehabilitation of both the deaf and hard of hearing child. Both the historical development and current trends in education of the hearing impaired will be reviewed.

780. Auditory Rehabilitation of Adults. 3 hours.
The social, educational, and vocational rehabilitation of hearing handicapped adults. Emphasis will be placed on the adjustment needs of the older person with gradually increasing hearing impairment.

781. Hearing Conservation.
A study of the methods used for the measurement of noise and ways of correcting its effects on the human hearing mechanism in the community, industry, and the military.

782. Teaching Language to the Hearing Impaired.
A study of the practices and procedure in teaching language to the hearing impaired, with a review of the historical philosophies and methods, and a review of the current literature.

783. Teaching Speech to the Hearing Impaired.
Theory, principles and procedures of teaching speech to the hearing impaired.

784. Curriculum for the Hearing Impaired.
A study of the planning and presentation of curriculum to the preschool and elementary hearing impaired including a review of the program available and techniques in the modification of published programs and book series.

801. Seminar in Speech Pathology.
Prerequisite: Six courses in speech correction or four courses and consent of instructor.
Intensive exploration of the research and theory in one or more areas of speech pathology. Specific content adapted to the needs of the students. Group projects in addition to readings and lectures.

802. Seminar in Audiology.
Study of recent developments and research in audiology.

803 A-G. Research Seminar in Speech Pathology. 1 hour each.
Intensive study of research in a specific area of speech pathology.

804 A-G. Research Seminar in Audiology. 1 hour each.
Intensive study of research in a specific area of audiology.

805 A-G. Research Seminar of Hearing Impaired. 1 hour each.
Intensive study of research in a specific area of Hearing Impaired.

817. (PSY) Theories of Language Development and Disorders.
Prerequisite: SPA (PSY) 650 or consent of instructor.
Norms and stages of language development; relationship of language theories to learning theories; interaction effects of behavior and verbal symbols and relationship to teaching; review of major research on language development, deviations, and diagnosis.

836. Advanced Speech and Hearing Science.
Laboratory experience in the instrumental analysis of speech.

872. Organic Disorders of Speech: Cleft Palate. 3 hours.
Prerequisite: Six courses in speech pathology and audiology.
A detailed study of the cleft palate and its effect on speech; means for assessing speech adequacy and potential for improvement; and role of the speech pathologist in the rehabilitation of cleft palate individuals.

875. Neuropathologies of Speech and Language.
Neurological correlates of speech and language, pathologies affecting neural mechanisms including aphasia, dysarthria, apraxia and agnosia in children and adults, clinical evaluation and treatment.

899. Research Seminar in Speech Pathology and Audiology.

930. Thesis in Speech Pathology and Audiology. 5–50 hours.

960, 961, 962. Educational Research in Speech Pathology and Audiology.

970, 971, 972. Internship in Public Schools: Speech Pathology and Audiology.

973, 974, 975. Internship in Institutions: Speech Pathology and Audiology.

976, 977, 978. Internship in Clinical Centers: Speech Pathology and Audiology.

979. Internship in Research: Speech Pathology and Audiology.

STUDENT TEACHING (EST)

600. Special Problems in Student Teaching.

700. Curriculum, Materials and Methods: Elementary Student Teaching. 10 hours.
Prerequisite: EPY 304, EPY 335, EPY 336 or equivalent, one year of full-time teaching, and need credit for student teaching for certification.
Problems of curriculum, materials and methods for experienced teachers in lieu of regular student teaching. Sectioned by teaching field. Offered only in the first six weeks session of summer quarter.

701. Curriculum, Materials and Methods: Junior High Student Teaching. 10 hours.

702. Curriculum, Materials and Methods: Secondary Student Teaching. 10 hours.

703. Art Student Teaching Curriculum. 10 hours.

704. Music Student Teaching Curriculum. 10 hours.

705. Business Education Student Teaching Curriculum. 10 hours.

706. Physical Education Student Teaching Curriculum. 10 hours.

710. Fundamentals in Supervision of Student Teaching.
Prerequisite: Limited to supervising student teacher personnel.
Introduction to the theory, principles, and practices in the supervision of student teaching and other professional laboratory experiences.

711. Internship in the Supervision of Student Teaching.
Prerequisite: Must have student teacher and consent of instructor.
A study work program; directed supervision of student teaching. Supervised internship in cooperating laboratory schools.

712. Investigation in the Supervision of Student Teaching.
Prerequisite: EST 710 and 711 and consent of instructor.
An advanced course in the supervision of student teaching, emphasizing research in problems of student teaching.

TRADE AND INDUSTRIAL EDUCATION (ETI)

600. Special Problems in Trade and Industrial Education.

700. Occupational Analysis.
Techniques in analyzing occupations and jobs within an occupation for instructional content.

701. Principles and Practices in Teaching Industrial Education.
Principles and practices of teaching manipulative skills and related technology; organization of subject matter, lesson planning and student appraisal.

702. Curriculum Planning for Trade and Industrial Education.
Principles and procedures in the development of curricula for trade and technical courses.

703. Instructional Development of Trade and Industrial Education.
Development of courses of study, course outlines, instructional material, and organization of course content.

704. School Shop Equipment and Management.
Principles involved in the physical planning of school shops and laboratories; selection of tools and equipment.

705. History and Policies of Trade and Industrial Education.
History of trade and industrial education; contributions of vocational educators; and principles and laws under which program operates.

708. Development of Diversified Cooperative Training Programs.
Analysis of community training needs; relations between school, community, and industry, and organization of DCT programs.

709. Selection and Utilization of Instructional Material for Cooperative Programs.
Selection, organization and application of source material for general and directly related study in part-time cooperative classes.

710. Problems in Trade and Industrial Education.
Specialized training appropriate to the needs of the individual.

711. School Laboratory and Industrial Safety.
Principles and practices involved in safety in school classrooms, shops, and laboratories.

746, 747, 748. Internship in Teaching Trade and Industrial Education.

765. Applied Project in Trade and Industrial Education.

963. Critique of Educational Literature in Trade & Industrial Education.

(For other course offerings in trade and industrial education, see listings under Vocational Education).

VOCATIONAL EDUCATION (EVO)

600. Special Problems in Vocational Education.

610. Principles and Practices of Career Education.
An overview of Career Education including major theories of career development and adjustment, program characteristics, leadership and administration, and curriculum materials and other resources.

699. Research Seminar.

701. Individual Instruction for Vocational Education.
Course provides background and knowledge required for developing and implementing individualized instruction for vocational education programs at the secondary and post-secondary levels. Methods will be applied specifically to vocational education curricula.

703. Coordination of Cooperative Vocational Education Programs.
Standards and selection of students and training stations and guidance of students in cooperative vocational education programs.

705. Problems of Teaching Vocational Education.

706. Methods and Materials for Youth Organizations.
Includes contributions of youth organizations to vocational education curricula; planning, directing, and evaluating programs of work, including group and individual projects; techniques of leadership training and group development; for teachers, supervisors, and administrators of vocational education.

707. Adult Vocational Education.
Designed to develop a philosophy of adult education; to develop techniques for discovering adult problems; and to discover and apply appropriate methods of organizing and teaching adult groups.

720. Evaluation of Vocational Programs.
Designed to prepare vocational educators to identify and select evaluation models, collect and analyze data, report data, and relate evaluation to program change for local and state vocational education programs.

725. Program Projection in Vocational Education.
Designed to develop the competencies necessary for the development of annual and long range plans for vocational education programs in educational systems. Competencies include data collection, writing program objectives, writing plans and identifying alternatives.

746, 747, 748. Internship in Teaching Vocational Education.

765. Applied Project in Vocational Education.

803. Improving Personnel Performance in Vocational Education.
Leadership behaviors for improving the job performances of full and part-time faculty and staff in vocational schools and local vocational programs.

806. Administration and Supervision of Vocational Education Programs.
Making provisions for the operation of schools and local school programs that offer vocational education so that their objectives can be defined and achieved.

899. Research Seminar in Vocational Education.

900. Curriculum Planning in Vocational Education.

901. Teaching Procedures in Vocational Education.
Consideration is given to the development of curricula based on the needs and interests of students.

902. Evaluation in Vocational Education.
Designed to guide teachers in the development of methods and techniques for evaluating instructional programs and for evaluating student development.

903. Supervision of Vocational Teaching. A philosophical base for vocational teacher education; the identification of problem areas and the determination of relative emphasis various agencies should place on problem areas; projection of plans for supervised teaching program.

904. Problems in Vocational Education.

908. Foundations of Vocational Education. Overview of history, legislation, premises, and curriculum interrelationships of vocational education and practical arts programs.

930. Thesis in Vocational Education. 5–50 hours.

946, 947, 948. Internship in Teaching Vocational Education.

960, 961, 962. Educational Research in Vocational Education.

963. Critique of Educational Literature in Vocational Education.

970, 971, 972. Internship in Vocational Education.

980, 981, 982. Practicum in Vocational Education.

ENGLISH (ENG)

John Algeo
(Robert E. Park Hall, North Campus)

Doctoral language requirement: two foreign languages (French, German, or Latin). Other requirements for the M.A., M.A.T. and Ph.D. degrees may be obtained from the director of graduate studies in English. Details of the M.A.T. program may be found on page 31.

Two courses in English numbered 400 or above are prerequisite for admission to the following courses.

600. (LIN) Old English. (Provost, Stephenson) The language and literature of England before the Norman Conquest, with reading of selected texts.

602. Chaucer. (Irwin, Mitchell, Provost, Stephenson) *Canterbury Tales*, *Troilus and Criseyde*, and minor poems.

603. Milton (Martin) The works and times of John Milton.

604. English Grammar. (Appleby, Stephenson) English grammar in the scholarly tradition of Curme and Jesperson.

605. The Age of Johnson. (Baine, Waller) English literature of the late eighteenth century, emphasizing Johnson, Boswell, and Blake.

606. Spenser. (Lower) A study of the *Faerie Queene*, the *Shepherds Calendar*, and the *Amoretti* , with attention to Spenser's other works and his literary context.

607. Jacobean Drama. (Martin) English drama from 1603 to 1642 exclusive of Shakespeare.

608. Restoration and Eighteenth Century English Drama. (Waller) Outstanding dramatists of the period: Dryden, Wycherley, Addison, Goldsmith, Sheridan, and others.

609. Elizabethan Literature. (Doyle, Gordon, Lower, Stewart) Non-dramatic poetry from Spenser to Donne, with some attention to prose and to earlier poets.

611. (LIN) Transformational Syntax.
(Algeo, Appleby, Irwin)
Grammatical analysis of the English language.

612. Seventeenth Century Prose and Poetry.
(Doyle, Martin)
Nondramatic literature of the seventeenth century exclusive of Milton.

613E. (LIN) History of the English Language.
(Algeo, Appleby, Irwin, Stephenson)

614. Early Eighteenth-Century Prose and Poetry. (Baine, Beaumont)
Poetry and prose of the earlier eighteenth century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

616. Early Romantic Literature. (Patterson)
Wordsworth, Coleridge, and other writers.

617. Later Romantic Literature.
(Calhoun, Patterson)
Byron, Shelley, Keats, and other writers.

618. Beowulf. (Stephenson)
Prerequisite: ENG 600 or reading knowledge of Old English.
The poem in the original Old English, with attention to important critical studies.

619. The Literature of the Restoration. (Waller)
A survey of non-dramatic literature from 1660 to 1700.

620. Early American Writing. (Franklin, Moore)
American literature from the beginning through Irving.

621. Old English Literature.
(Provost, Stephenson)
Prerequisite: ENG 600.
Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

623. (LIN) Middle English.
(Mitchell, Stephenson)
A survey of Middle English language and literature, exclusive of Chaucer and the drama. Some previous acquaintance with Old English or Middle English is desirable but not required.

624. The Eighteenth-Century English Novel.
(Baine)
The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

625. American Romanticism.
(Colvert, Moore, Vorpahl)
Representative works of the Romantics and Transcendentalists, with emphasis on Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

626. The Nineteenth-Century British Novel.
(Patterson)
The development of the British novel in the nineteenth century.

627. American Realism and Naturalism.
(Moore)
Representative works of the realists and naturalists, with emphasis on James, Clemens, Crane, Norris, and Dreiser.

628. The American Novel to 1900.
(Franklin, Kibler, Moore, Vorpahl)
The works of major novelists from Cooper through Norris.

629. Southern Literature.
(Colvert, Kibler, Krickel, Moore)
Literary achievement in the South from 1610 to the present, with emphasis upon Poe, Clemens, and Faulkner.

630. (CML) History of Literary Criticism. (Free)
A survey of literary theory from the Greeks to 20th century formalism.

633. American Poetry to 1900. (Franklin, Kibler)
A study of representative poets from Edward Taylor through Stephen Crane.

638. English Drama to 1600.
(Benson, Provost, Stewart)
English drama from the liturgical through the works belonging to the Elizabethan age, excluding Shakespeare.

639. Prose and Poetry to the Early Tudor Period.
(Doyle, Gordon)
Major English writers from c. 1485 to the mid-16th century: More, Ascham, Eliot, Hoby, Skelton, Barclay, Wyatt, Surrey, Sackville. Literary genres, trends, and influences will be studied, on the continent as well as in England.

640. Shakespeare: Part I.
(Gordon, Lower, Martin, Stewart)
The early plays.

641. Shakespeare: Part II.
(Lower, Martin, Stewart)
The later plays.

642. Victorian Poetry. (Marshall)
Tennyson, Browning, and Arnold.

648. (LIN) English Grammar: Phonology and Morphology. (Algeo, Appleby, Irwin)
The phonological and morphological structure of Modern English.

652. Victorial Prose. (Thurman)
The major Victorian prose writers, chiefly Carlyle, Newman, Mill, Ruskin, and Arnold.

659. Modern Irish Literature. (Leamon)
Fiction, poetry, and drama of the Irish Renaissance and after.

661. Twentieth-Century British Poetry.
(Krickel, Montgomery)
British poetry since the 1890's.

662. Twentieth-Century American Poetry.
(Krickel, Leamon, Montgomery)
American Poetry from the Imagist Movement to the present.

663. The Twentieth-Century British Novel.
(Bufkin, Krickel)

664. The Twentieth-Century American Novel.
(Bufkin, Colvert, Krickel, Montgomery)
The American novel since World War I.

665. Modern Drama. (Free, Thurman)
The drama of Europe and America from Ibsen and Strindberg to the present.

675ABCD. Apprenticeship in College English.
1 hour each. (Barnett)
Prequisite: Two courses in English numbered 400 or above.
An apprenticeship in the teaching of freshman composition and of sophomore literature for MAT candidates.

803ABC. Topics in Non-dramatic English Literature, 1500–1660. 5 hours each.

806ABC. Seminar in English Romantic Literature. 5 hours each. (Patterson)
A major writer or special topics of the period.

809ABC. Seminar in Medieval Topics. 5 hours each. (Mitchell, Stephenson)

810ABC. (LIN) Seminar in English Linguistics.
5 hours each. (Algeo, Stephenson)

815ABC. Seminar in Eighteenth-Century Literature. 5 hours each. (Baine)
Swift, Pope, Johnson, Fielding, or Blake.

820ABC. Seminar in American Literature.
5 hours each. (Colvert, Moore, Vorpahl)
A research course on Special problems in American literature.

829ABC. Seminar in Southern Literature.
5 hours each. (Moore)
Special problems in Southern literature.

840ABC. Seminar in Elizabethan Drama.
5 hours each. (Lower)
Special problems in Elizabethan drama.

842ABC. Seminar in Victorian Literature.
5 hours each. (Marshall)
Tennyson, Browning, and Arnold.

850. Bibliography and Research Methods.
(Marshall)
Recommended for all beginning graduate students in English.

865A-E. Seminar in Modern Literature.
5 hours each. (Bufkin, Free, Montgomery)
An author or problem in twentieth-century British or American literature.

930. Thesis. 5–15 hours.

ENTOMOLOGY (ENT)

Preston E. Hunter
(Biological Science Building, South Campus)

Doctoral language requirement: one language.

The Department of Entomology offers graduate work leading to the professional MPPPM (Master of Plant Protection and Pest Management) degree, and the M.S. and Ph.D. degrees. The MPPPM is a non-thesis degree requiring 50 hours of specified graduate level course work, two units of internship, plus 10 hours of selected graduate level electives. Details of the MPPPM program may be found on page 33. The M. S. and Ph.D. are research degrees requiring course work plus original research leading to a thesis or dissertation. Students holding the baccalaureate degree only are normally admitted at the M.S. level but may petition to bypass this degree and work straight for the Ph.D. after meeting specific departmental requirements.

In addition to the faculty at the Athens campus, students may carry out research work under the direction of faculty at the Experiment Station at Griffin or at Tifton, Georgia. Facilities and opportunities for studies on applied aspects of entomological problems are emphasized at these stations. On the Athens campus faculty joint staffed with the College of Agriculture, the Institute of Ecology, and the Faculty of Parasitology enable students to earn a degree in Entomology with training in related disciplines. Faculty and specialized facilities are available for student training in acarology, agricultural entomology, apiculture, aquatic entomology, insect behavior, insect biochemistry, insect endocrinology, forest entomology, insect ecology, insect histology, medical entomology, morphology, physiology, radiation entomology, systematics, and toxicology. Facilities outside the department but available for use include electron transmission and scanning microscopes, computer facilities, forest research area, and the U.S. Department of Agriculture and Forestry laboratories. Particularly good library facilities in Entomology are available.

Every student working toward a M.S. or Ph.D. degree is required to serve as a Teaching Assistant in at least one course every two years. Students intending to pursue a career of teaching or teaching/research should plan to acquire additional experience in teaching and teaching methods.

Departmental and research assistantships are available from the Entomology Department. Other financial aid is available through the Graduate School, but applications should be submitted to the Department of Entomology.

Students without the equivalent of a bachelor's degree in Entomology are required to make up any deficiencies during their graduate tenure.

601. Insect Taxonomy. 5 hours. Three lectures and 2 double laboratory periods. (Atyeo)
Prerequisite: ENT 325 or equivalent.
The principles of taxonomy with practice in the classification of all orders of insects.

613AB. (AGY/HOR/PAT) Internship in Crop Protection and Pest Management. 1 hour each.

615. Insect Physiology. 5 hours. Three lectures and 2 double laboratory periods. (Blum)
Prerequisite: ENT 460, one course in organic chemistry and either ZOO 390, BIO 330 or BOT 380.
An introduction to the general physiological processes and functions of the various organ systems of the insects.

640. Insect Behavior. 5 hours. Three lectures and one 3- to 4-hour laboratory period. (Matthews)
Prerequisite: ENT 325 or permission of instructor.
An evolutionary approach to the principles of behavior, with emphasis on reproduction, mimicry, insect-plant interactions and the development of sociality.

650. Insect Ecology. 5 hours. Three lectures and two laboratories. (Crossley)
Prerequisite: ENT 325 or equivalent.
A study of the processes and functional aspects of insect population and community ecology with emphasis on interactions between structure and the environment.

655. Advanced Honey Bee Biology and Apiculture. 5 hours. Daily lectures and field demonstrations.
Prerequisite: ENT 250 or equivalent, or permission of instructor.
A course designed to provide the student with practical experience in all phases of colony manipulation, management and disease control.

660. Insect Morphology. 5 hours. Two lectures and 3 double laboratory periods. (Hermann)
Prerequisite: ENT 325 or equivalent.

An introduction to insect structure and phylogeny.

670. Insect Histology. 5 hours. Two lectures and 3 double laboratory periods. (Hermann)
Prerequisite: ENT 660 or permission of instructor.
Comparisons of the histology and anatomy of insects with other invertebrates and vertebrates. Insect tissues will be dissected and preparations of the major body systems examined for gross and microscopic differences.

674. Applied Systems of Insect Control. 5 hours. Three lectures and 2 laboratory periods. (All)
Prerequisites: ENT 374 or permission of instructor.
Description of the major applied insect control techniques excluding insecticidal. Discussion of the advantages and limitations of these techniques including practicality, economics, environmental impact, etc. Final portion of the course will consider integrated control systems for development of a pest management program.

677. Chemistry and Toxicology of Insecticides and Fungicides. 5 hours. Three lectures and two laboratory periods. (Himel)
Prerequisite: One course in organic chemistry and one of the following entomology courses: 374, 376, or 382.
A study of the biology, use, metabolism, residue analysis, and impact of insecticides and their alternatives in agriculture and in the environment.

680. Introductory Acarology. 5 hours. Three lectures and 2 double laboratory periods. (Hunter, Crossley, Atyeo)
Prerequisite: One senior division course in biology.
Classification, ecology and biology of the major groups of mites.

682. Entomology in Natural Resources Management. 5 hours. Two lectures and three laboratories. (Berisford)
A study of arthropods which are important in forest resources management, including timber, wildlife, and recreation.

692AB. Field Entomology. 5 hours each. (Atyeo)
Prerequisite: ENT 401 and consent of instructor.
An extended summer field trip of 2–4 weeks during which the collection, identification and distribution of insects with respect to selected ecological habitats will be studied.

694. Aquatic Entomology. 5 hours. Three lectures and two double laboratory periods. (Wallace)
Prerequisite: ENT 325 or equivalent.
An introduction to taxonomy, life history and ecology of aquatic insects. Offered spring quarter of even years.

773. Entomology for Teachers. 5 hours. Two lectures and 3 laboratory periods. (Hermann)
Prerequisite: Two elementary courses in biological sciences and two courses numbered 300 or above in biological science or education.
A study of insects and related forms found on land and in water; their identification and life habits, with emphasis on the use of these forms in the teaching of biology.

800. Entomology Seminar. 1 hour. Weekly meetings of one hour.
Prerequisite: Graduate status in a biological science.
Discussion of topics relating to entomology, both fundamental and applied, including literature reviews and discussion of recent advancements.

816. Insect Endocrinology. 5 hours. Three lectures and two 2-hour laboratory periods. (Blum, Lea)
Prerequisite: CHM 261, ENT 615 or consent of instructor.
A study of metabolism and physiological regulatory mechanisms in insects. Laboratory practice in microsurgical techniques for extirpation and transplantation of endocrine tissues.

817. Insect Biochemistry. 5 hours. Three lectures and two double laboratory periods. (Blum)
Prerequisite: ENT 615 and one graduate level course in biochemistry.
A study of the metabolic systems and natural products produced by insects. The course will stress biochemical pathways which are peculiar to insects.

830. (PS, PAR, ZOO, PAT) Seminar in Parasitology. 1 hour.

860. Radiation Entomology. 5 hours. Two lectures and two 3-hour laboratories. (Crossley)
Prerequisite: Two senior division courses in entomology (including ENT 450 or equivalent) plus one course in statistics.
Application of radiation and radioisotope techniques to entomology, especially insect ecology and control of insect pests.

871. Taxonomy of Insect Larvae. 5 hours. Two lectures and three double laboratory periods. (Wallace)
Prerequisite: Any one of the following: ENT 374, or 376, or 460 and one additional senior division course in biological science.
A study of the classification, biology, and

phylogenetic and economic significance of insect larvae. Offered alternate years.

875. Principles of Systematics. 5 hours. Three lectures and two double laboratories.
Prerequisite: 10 hours of animal biological sciences.
A scientific analysis of the three facets of 1:1 systematics—speciation (the processes of species formation), phylogeny (a reconstruction of the path of evolution, extended to the inference of biogeography, time determinations, and ecological evolution), and classification. This analysis applies to all groups of living organisms.

876. Advanced Medical Entomology I.
5 hours. Three lectures and two double laboratory periods. (Weathersby)
Prerequisite: Consent of instructor.
A study of the classification, life history, biology and control of medically important Diptera. Alternate years (even).

877. Advanced Medical Entomology II.
5 hours. Three lectures and two double laboratory periods. (Weathersby)
Prerequisite: Consent of instructor.
A study of the classification, life history, biology and control of the medically important arthropods other than Diptera. Alternate years (odd).

880. Advanced Acarology. 5 hours. Three lectures and two double laboratory periods. (Atyeo, Crossley, Hunter)
Prerequisite: ENT 680.
An intensive study of selected groups of mites with emphasis on their relationship to man.

887. Advanced Insect Toxicology. 5 hours. Three lectures and two double laboratories. (Brady)
Prerequisite: Consent of instructor.
A study of modes of action of important classes of insecticides and other materials important to insect control, structure-toxicity relationships, insecticide metabolism, mechanisms of selective toxicity and resistance, and environmental considerations. Offered Spring quarter, even years.

900. Problems in Entomology. 1–5 hours.
In this course students are allowed to work intensively on approved problems in entomology.

930. Thesis. 5–50 hours.

ENVIRONMENTAL DESIGN (ENV, LAR)

Robert P. Nicholls
(Landscape Architecture Building, North Campus)

The design of open space—landscape architecture—is both a challenge and a profession. It is a creative process leading to an efficient and beautiful environment. Today, our environment is increasingly endangered by man's inept stewardship of his world. The School of Environmental Design seeks to avert this danger by training professionals dedicated to the pursuit of excellence in environmental stewardship. Through its series of programs in design, education and research, the school serves as a regional center for environmental planning and design in the southeastern United States.

The prospective student will find that the school is well located to serve as a regional center. In addition to the many facilities and courses offered by the school and University at large, the special facilities of the Institute of Ecology, Institute of Natural Resources, and Institute of Community and Area Development are available as additional educational and research resources. Other cooperating federal, state, and local government agencies include the U. S. Department of Agriculture, the Agricultural Extension Service, the Northeast Georgia Area Planning and Development Commission and the Southeast Area Water Laboratory.

The school offers a four quarter graduate professional program leading to the degree of Master of Landscape Architecture. An eight quarter joint program in landscape architecture and city planning is also offered in cooperation with Georgia Institute of Technology. Candidates for the joint program receive degrees in landscape architecture and city planning. The programs of the school are adapted to and encourage students with varying academic backgrounds. However, the plan of study for such students will vary depending upon their academic and professional preparation and their technical competence in landscape architecture.

The Master of Landscape Architecture degree requires 60 credit hours of study beyond the baccalaureate degree. Details of this program may be found on page 33. The program recognizes that the responsibilities of the professional landscape architect become greater as the complexities of the human environment increase. To satisfy these responsibilities the program has the following objectives: to train professionals with a broader academic foundation than that which can be obtained at the undergraduate level; to initiate research projects in environmental design; to initiate research projects in environmental design; to train graduates of other disciplines as environmental designers; to study urban and regional scale problems of environmental design; to provide the graduate student with the facilities and the academic philosophy which permits and encourages independent research, discovery and individual expression; to encourage the development of multidiscipline approaches to the study of and solution to environmental design problems. (The program is under review and some new options are likely to be offered within the 1977–79 period—candidates should write to the coordinator, Graduate Studies, School of Environmental Design.)

Joint Program in City Planning

The University of Georgia Graduate School and the Georgia Institute of Technology offer a joint two-year program for eligible graduate students leading to the simultaneous award of two degrees—Master of City Planning by Georgia Institute of Technology and Master of Landscape Architecture by The University of Georgia.

This joint program serves the rapidly growing needs of planning agencies, planning consultants and others for professionals who have competence in city planning and large scale urban design. For information on this program, interested candidates should write to the coordinator. Graduate Studies, School of Environmental Design, University of Georgia.

600. Man and the Physical Environment.
Prerequisite: Upper division standing or consent of instructor. Not open to landscape architecture majors.
A survey course for non-majors which investigates the natural and man-made forces affecting environmental quality and change. Developed to prepare the student for a participating role in environmental issues.

653. City Planning and Environmental Design.
A graduate background course in city planning and civic design, covering the history, theory and bibliography of the subject. The student is introduced to an informed understanding of civic problems and modern trends in city and regional planning.

676. Restoration and Preservation of Historic Buildings and Sites.
An introduction to the subject, movement in twentieth century America; legislation, criteria, theory and methodology.

701, 702, 703, 704. Special Problems in Landscape Architecture. 5 hours each.
Prerequisite: A minimum of 10 quarters hours of senior division work in design and consent of instructor.
Intensive studies in special aspects of landscape architecture, designed to explore applications in such fields as park and recreation development, planting design, theory and history, landscape construction, rural and urban land use studies and development. Several group projects are undertaken by the students to acquaint them with large and complex planning and design studies in which teamwork requiring research, analysis and design is involved.

720. (GLY) Environmental Geology.

725. Regional Recreation Planning.
Regional scale survey; devoted to facilitate ultimate requirements for recreation, considered in the realm of conjecture and rationalization. A general term project of function, space requirements, financial considerations and policies for the future.

727. Park Design.
The study and formulation of master plans for specific recreational sites. Problems in schematic diagramming of land use; site surveys, staging developments and planting design principles. Discussion of ethics, contracts and specifications.

754. Civic Design. 3 hours.
Prerequisite: LAR 653.
The study of techniques for the design and improvement of the urban environment, including methods for the beautification, renovation, restoration and preservation of towns, buildings and historic sites.

765. Advanced Landscape Construction II.
Prerequisite: LAR 358.
The study of construction and engineering requirements involved in subdivision and other large scale landscape design projects, including land drainage, sewage disposal, road design, cost estimating and specification writing.

801AB. Seminar in Landscape Architecture. 1 hour each.
Prerequisite: A minimum of 10 quarter hours of graduate study or consent of instructor.
The discussion of current issues, research and new developments in the field.

930. Thesis. 5–50 hours.

FOOD SCIENCE (FS)

C. J. B. Smit
(Food Science Building, South Campus)

Doctoral language requirement; one language.

Graduate programs leading to the degree of Master of Science in food science and to the Doctor of Philosophy in food science are offered.

Since the application of science and engineering are important in properly selecting, preparing, processing, packaging, distributing and utilizing foods, students selecting this field must be able to delve into problems involving chemistry, microbiology, and other basic sciences as well as in the more applied problems concerned with food production, stability, or toxicology. Individuals whose baccalaureate degree is in other fields of science often enter this graduate program because of the important challenges of supplying food to mankind, and the opportunities that this field provides to those with advanced degrees. Programs of study are worked out for each individual to best utilize his prior training and his career objectives. The food science department occupies one of the buildings in The University of Georgia science complex, is well equipped with modern instrumentation and other facilities for graduate research, and its staff is composed of scientists trained in several of the fundamental disciplines as well as in food science or technology.

Financial assistance is available through (1) graduate teaching or research assistantships; (2) competitive or sponsored fellowships and industrial assistantships. Prospective students are encouraged to inquire about financial aid before entering Graduate School by contacting the food science department.

Courses in dairy manufacturing are listed under the heading "Dairy Science."

607. (MIB) Microbiology of Foods. 5 hours. Two lectures and three 2-hour laboratories.
Prerequisite: MIB 350.
Microorganisms in natural and processed foods; their origin, nature, and effects on foods; enumeration; relationship to health.

609. Community and Home Food Preservation. 5 hours. Three lectures and two 2-hour laboratories. (Powers)
Prerequisite: At least two senior division courses in appropriate departments as determined by the instructor.
The principles of food preservation will be studied with reference to present practices and possible improvement in home and community methods. The effect of various methods of food preservation will be evaluated in terms of public health, food spoilage, food quality, and the nutritional value of the foods.

611. (AEN) Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour laboratories. (Toledo)
Prerequisite: FS 301, 367 or 409.
Mass and energy balance, fluid flow, heat transfer, and refrigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

612. (AEN) Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour laboratories. (Rao)
Prerequisite: FS 611 or consent of instructor.
Continuation of FS 611. Covers phase equilibria in foods, evaporation, de-aeration, drying, filtration, size reduction, mechanical separation processes, agglomeration, and process control.

614. Food Chemistry. 5 hours. Three lectures and two 3-hour laboratories. (Lillard)
Prerequisite: CHM 240 or 340, FS 301, 367, or 409.
A study of the chemical and physical properties of foods.

619. (FDN) Nutritional Aspects of Food Science. (Eitenmiller, Peifer)
Prequisite: FS 414, BCH 301, or permission of instructor.
A study of the nutritional properties of food and the effects of modern technology on nutritional quality.

621. (MIB) Environmental Microbiology. 5 hours. Two lectures and three 2-hour laboratories. (Hamdy)
Prerequisite: MIB 350.
Role of environment on organisms. Agents to retard, inhibit, or stimulate bacteria and their mode of action. Dynamics of physical, physiological and chemical factors affecting the bacteria and their resistance to antimicrobial agents. Isolation of anerobes and other factors affecting sporogenesis, dormancy spore germination and differentiation.

622. Instrumental Methods of Food Analysis. 5 hours. Three lectures and two 2-hour laboratory periods. (Koehler)
Prerequisite: CHM 240.
Spectrophotometric, colorimetric, chromatographic, and potentiometric methods of analysis as applied to food will be studied. Emphasis will be placed upon correlation and interpretation of results.

623. Food Packaging and Quality Control. 5 hours. Three lectures and two 2-hour laboratories. (Rao)
Prerequisite: MAT 101, MIB 350, FS 301 or 367.
The physical, chemical, microbiological and economic problems related to the use of metal, glass, paper, flexible films and other packaging materials in the food industry. Objectives of statistical quality control, experimental sampling approach to quality control, types of control charts, acceptance sampling and production control.

624. Advanced Science of Meat, Fish, and Poultry Processing. 5 hours. Three lectures and three 2-hour laboratories. (Carpenter, Reagan)
Prerequisite: FS 411, 414, and 407.
Advanced theoretical and applied concepts relating to physical, chemical, enzymatic, and microbial changes occuring in meat, fish and poultry products during processing. These will be studied with particular reference to canning, curing, freezing, refrigeration, spoilage of fresh and processed flesh products, and the use and development of by-products.

625. Governmental Regulation of Food Safety and Quality. 3 hours. (Ayres, Powers)
Prerequisite: Permission of instructors.
Role of mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness and nutrition.

626. (FDN) Sensory Principles and Practices. 5 hours. Three lectures and two 2-hour laboratories. (Greene, Powers)
Prerequisite: Permission of instructors.
The sensory properties of foods, methods for the evaluation of color, flavor, texture, appearance and other qualities, the relations of sensory qualities to chemical or physical attributes, and experimental design and the analysis of data will be studied.

800. (MIB) Industrial Fermentation. 5 hours. Three lectures and two 3-hour laboratories. (Hamdy)
Prerequisite: MIB 350 and BCH 601 or 801.
The ketogenic fermentation process, production of organic acids, enzymes, vitamins, antibiotics will be studied. Emphasis will be placed on theoretical or fundamental reactions involved and conditions affecting fermentative efficiency.

801. Food Polysaccharides. 3 hours. Two lectures and one 3-hour laboratory. (Smit)
Prerequisite: CHM 341 and FS 614.
A study of the occurrence, use, properties, detection and identification of the more important plant and marine polysaccharides with special emphasis on those present in foods or added to foods during manufacture.

802. Food Lipids. 3 hours. Two lectures and one 3-hour laboratory. (Lillard)
Prerequisites: CHM 341, FS 614, BCH 601 or 801, or permission of instructor.
A study of the structure, composition, properties, preservation, deterioration, analysis and nutritional qualities of lipids in foods.

805. Flavor Chemistry and Evaluation. 5 hours. Three lectures and two 2-hour laboratories. (Lillard, Powers)
Prerequisite: STA 621, CHM 341.
Sensory methods of evaluating flavor and physical or chemical methods of measuring flavor components; the flavor characteristics of various chemicals, especially as influenced by concentration and interaction with other compounds; flavor formulation; and the stability of flavor substances during processing and storage will be studied.

807. Food Colorants. 5 hours. Three lectures and two 2-hour laboratories. (Koehler)
Prerequisite: CHM 240.
The chemical, biochemical and nutritive properties of natural and artificial food colorants are studied. Methods used for their isolation and study are demonstrated.

808. Food Toxicology. 3 hours. (Ayres)
Prerequisite: FS 607, CHM 240.
Principles and problems in evaluating the wholesomeness, and safety of foods, food components, and intentional or incidental additives. Consideration of selective toxicity, detoxication mechanisms, structure and biological activity; basic concepts and techniques of safety evaluation, interpretation of biological data.

809. Colloidal and Rheological Properties of Food Systems. 5 hours. Three lectures and two 2-hour laboratories. (Rao)
Prerequisite: MAT 253, CHM 241, and FS 611.
Physical and chemical properties of food colloids with emphasis on emulsions, gels and sols. Introduction to rheology, theory of instrumental evaluation of elastics, plastic, viscous and viscoelastic properties of biological solids, colloids and fluids.

815. Food Science Seminar. 1 hour. (Smit)
Prerequisite: Any two senior division courses in food science.
Discussion of selected topics in food science.

819–820. Methods in Food Science. 5 hours each. (Eitenmiller)
Selected problems associated with food science will be studied to develop greater facility in the application of scientific methods to the solution of problems.

830. Radiation Principles. 5 hours. Two lectures and two 4-hour laboratories. (Hamdy, Johnson, LaRocca)
Prequisite: BCH 601 or equivalent.
Principles and techniques of radiochemistry and radiobiology.

856. Protein Chemistry. 5 hours. Two lectures and two 3-hour laboratories. (Hamdy)
Prerequisite: BCH 601 or 801.
An examination of the current research on proteins, their structure, isolation, denaturation, enzymatic and other biological activity. Consideration will be given to the physico-chemical properties, ion-protein interaction, and chemical modifications of proteins. (Offered alternate years.)

930. Thesis. 5–50 hours.

FOREST RESOURCES (FRS)

A. M. Herrick
(Forest Resources Building, South Campus)

Doctoral language requirement: one language.

Graduate opportunities in the School of Forest Resources encompass the numerous disciplines needed to understand and effectively manage the renewable natural resources.

Graduate training and research are conducted in forest ecology, silvicultural systems, forest tree physiology, forest genetics, forest hydrology, forest soils, forest protection, including fire science, forest entomology, and forest pathology, wood products, and wood technology. Excellent facilities are available for graduate study in terrestrial wildlife and in fisheries management. Students interested in the fields of mensuration, biometrics, and operations research find the opportunities for training to be excellent from the standpoint of both staff and computing facilities.

Physical facilities of the School of Forest Resources include a complex of three buildings, one of which is devoted entirely to graduate research facilities. In addition, two modern U. S. Forest Service research laboratories are located adjacent to the school. They provide a well-trained staff of scientists and excellent facilities for a cooperative research in silviculture, entomology, pathology, wood utilization, and timber characteristics. The Department of the Interior, Bureau of Sport Fisheries and Wildlife also maintains a Cooperative Fishery Unit in cooperation with the School of Forest Resources.

Students with baccalaureate degrees in related fields may be accepted if otherwise qualified.

600. Advanced Forest Soils. 5 hours. Three 2-hour lecture-laboratory periods. (Nutter, Schultz)
Prerequisite: FRS 310 and AGY 310.
Morphological, physical and chemical properties of soils in relation to growth of forest trees; classification of forest soil profiles and site index; response to harvesting and site preparation

treatments, drainage and fertilization. Appraisal of soil conditions on forest properties.

602. Forest Tree Improvement. 3 hours. Three lectures and two weekend field trips. (Brown, Reines, Steinbeck)
Prerequisite: GEN 358.
Methods of selection, breeding and propagation; heritability, geographical variation patterns in forest tree species.

611. Watershed Hydrology. 4 hours. Three lectures and a 2-hour laboratory period. (Nutter)
Prerequisite: FRS 311 or equivalent.
General hydrology as based on the hydrologic cycle with emphasis on the role of soil, vegetation, physiography and the microclimate on processes of precipitation, runoff, erosion and land forming. Problems of measurement of streamflow, groundwater, soil moisture, precipitation, and engineering applications are included.

630. Forest Range Management. 3 hours. (Jenkins)
Prerequisite: FRS 302.
Principles of range management involving the use by domestic animals and wildlife of forest range as a resource; improvement of forest range; ecology of forest range plants.

631. Aquatic Environments. 5 hours. Three lectures, two 2-hour laboratory periods and field trips. (Scott)
Prerequisite: FRS 330.
Consideration is given to organisms commonly found in aquatic habitats associated with forest lands and to the factors which influence them.

636. Fish Ecology. 5 hours. Four lectures and one 2-hour laboratory period. (Dudley)
Prerequisite: Permission of instructor.
Discussion of biological, physical and chemical factors affecting fishes and fish populations with emphasis on growth, feeding, reproduction, movements and migrations, tolerance to adverse environmental conditions, and species interactions. Management implications are also considered. Winter Quarter.

637. Fish Physiology. 3 hours. (Reinert)
Prerequisite: ZOO 226 or permission of instructor.
An overall review of basic fish physiology with an emphasis on the effects of various environmental stresses on physiological functions of fish.

640. Forest Recreation Management. 3 hours. (Cook)
Prerequisite: FRS 303 and 340, or permission of the instructor.
Methods of manipulating forest stands and understory vegetation for forest recreation and the maintenance of aesthetic quality.

650. Timber Characteristics and Utilization. 4 hours. (Beckwith, Rice)
Prerequisite: FRS 350.
Study of wood products, their manufacture and the influence of their production on forestry practices.

651. Physical and Mechanical Properties of Wood. 5 hours. Three lectures and two 2-hour laboratory periods. (Beckwith, Rice)
Prerequisite: FRS 450.
The physical nature of wood, including moisture, heat, light, sound, and electrical relations. Strength and other characteristics of commercial woods as related to growth and utilization; examination of standard testing procedures.

652. Advanced Wood Anatomy. 3 hours. Three 2-hour laboratory periods. (Beckwith)
Prerequisite: FRS 350, or BOT 323.
The recognition and identification of woody tissues and the anatomical elements that make up these tissues; their function; the microstructure within these elements; and the interpretation of woody element's structure from electron micrographs.

653. Principles of Micro-Measurements. 2 hours. Two 2-hour laboratory periods. (Beckwith)
Prerequisite: FRS 350, or BOT 323.
Microtechniques used in the study of wood elements, characteristics and behavior.

661. Forest Mensuration. 4 hours. Three lectures and one 2-hour laboratory period. (Brister, Clutter, Pienaar)
Prerequisite: FRS 360 and STA 321.
Methods for direct measurement and indirect estimation of primary and secondary forest products. Emphasis on sample survey applications in timber management and on forest growth and yield relationships.

662. Timber Management. 4 hours. (Brister, Clutter, Pienaar)
Prerequisite: FRS 661.
Organization and management of forest properties for the production of commercial forest products.

663. Advanced Timber Management. 4 hours. (Brister, Clutter, Piernaar.)
Prerequisite: FRS 662.
Detailed consideration of the relationship between timber management practices and basic biological principles. Considerable attention is devoted to systems of intensive management used outside the United States.

671. Quantitative Decision Methods for Forest Resources Management. 5 hours. Four lectures and one 2-hour practicum. (Clutter, Fortson)

Prerequisite: FRS 360, STA 321, or equivalents, or consent of instructors.
Principles of forest resources management and management decision-making. Particular emphasis on optimization procedures and financial analysis.

672. Forest Resources Management and Economics. 5 hours. Four lectures and one 2-hour practicum. (Dress)
Prerequisite: FRS 671 or consent of instructor.
Managerial decisions and resource use planning, including economic analysis of alternatives, choices of optimal and preferred strategies, and implementation in conflicting use situations. Resource history and policy sufficient for appropriate consideration in formulation of management objectives and strategies in both the private and public sectors.

673. Senior Project in Forest Resources Management. 5 hours. Three lectures and two 2-hour practicums. (Dyson)
Prerequisite: FRS 672 or consent of instructor.
Advanced problems in forest resources management integrating all courses to date.

680. Forest Resources History and Policy. 3 hours. (Patterson)
History and development of forest resources legislation leading to present United States forest resources policies.

681. Forest Resources Law. (Patterson)
A study of the legal aspects of forest resources administration. This course is not a law course as would be taught in a school of law. Not open to students enrolled in the school of law.

683. Forest Land Use Planning.
The overall use and planning of forest lands and resources consistent with technological, legal, social, economic and political constraints.

690. Informational Methods in Forest Resources. 3 hours. (Patterson)
Procedures and techniques for using various media essential to disseminating forest resource information to the public.

700. Artificial Regeneration. 5 hours. Three 2-hour lecture-laboratory periods. (Fitzgerald, Reines)
Prerequisite: FRS 303.
Fundamentals and practices of artificial regeneration. Propagation; seed development, germination, technology, and certification; nursery management; site preparation, direct seeding; planting; and development, yield, and financial aspects of plantations.

730. Techniques in Wildlife Population Analysis and Management. 5 hours. Three lectures, two 3-hour laboratories, and field trips. (Marchinton)
Prerequisite: Permission of instructor.
Field and laboratory methods commonly used by professional wildlife ecologists to analyze and manipulate animal populations.

731. Advanced Principles of Wildlife Management. (Jenkins)
Prerequisite: FRS 730.
Applications of principles of animal and plant ecology to the biological basis of wildlife management and its coordination with other uses in terrestrial and aquatic habitats.

734. Parasites of Freshwater Fishes.
5 hours. Two lectures and one 4-hour laboratory.
Prerequisite: Permission of instructor.
Parasites of sport and commercial fresh water fish in the southeastern United States. Emphasis on life cycles, taxonomy, ecology techniques for host examination, preservation of specimens, and control measures.

735. Wildlife Habitat Management. 5 hours. Three lectures and two 3-hour laboratory periods. Extended field trips required. (Johnson)
Prerequisite: Permission of instructor.
A field course dealing with ecology of wildlife habitats and their manipulation in relation to other land uses.

736. Fishery Management Techniques.
5 hours. Four lectures and one 2-hour laboratory period. (Dudley)
Prerequisite: Permission of instructor.
Principles and methods of managing fishery resources. Topics include estimation of population numbers, mortality and survival rates, production and yield, and effectiveness of management techniques in natural and artificial waters.

740. Forest Recreation Area Development. 3 hours. (Cook)
Prerequisite: FRS 340 or permission of instructor.
Principles of recreation area planning, site selection, and development.

751. Adhesive Properties and Uses. 3 hours. (Rice)
Prerequisite: Permission of instructor.
Types of adhesives available, types of materials commonly bonded with adhesives, joint design related to adhesive selection and a general review of bonded assembly and product uses.

770. Forest Resources Economics I. 5 hours. Three lectures and two 2-hour laboratory periods. (Dyson)
Application of economic and financial principles to resourse use.

772. Forest Harvesting. 4 hours. (Dyson)
Prerequisite: FRS 303.
Equipment, methods, and transportation cost analysis.

780. Operations Analysis in Forest Resources. (Fortson)
Corequisite: FRS 671.
Applications of management science techniques to forest resource administration. Modern data processing is utilized to facilitate solution of current problems.

781. Operational Problems in Forest Resources Management. (Hargreaves)
Principles of management relating to the forest resources enterprise. Specific case problems are analyzed.

784. Forest Resources Administration. 3 hours. (Patterson)
Problems, policies and procedures applicable to administration of personnel; supervisory techniques; professional ethics; professional licensing.

790. Urban Woodlands. (Reines)
The use, application, and care of vegetation (trees, parks, woodlands, greenbelts, and rights-of-way) in the solution of environmental problems arising from urbanization. Policies, ordinances, and restraints governing the establishment and maintenance of urban woodlands. The activities and techniques employed by urban foresters. Open only to Forest Resources students.

798A. Fishery Management Problems. 1–15 hours.
Intensive study of an aspect of forest resources management.

798B. Timber Management and Utilization Problems. 1–15 hours.
Intensive study of an aspect of forest resources management.

798C. Water Resources Problems. 1–15 hours.
Intensive study of an aspect of forest resources management.

798D. Planning and Administration Problems. 1–15 hours.
Intensive study of an aspect of forest resources management.

798E. Wildlife Management Problems. 1–15 hours.
Intensive study of an aspect of forest resources management.

800. Forest Resources Seminar. 1 hour. Max. 6 hours.
Topics, both fundamental and applied, relating to multiple-use management of forests and wild land, including literature review and current advances.

802. Tree Physiology. (Brown)
Prerequisite: FRS 302, or BOT 380 or 483, or HOR 308.
Special topics in structure and function of woody plants with emphasis on growth of forest trees. Patterns of primary and secondary growth, growth, and form, transport in xylem and phloem, dormancy and reproduction.

820. Scientific Research for Multiple Resource Decisions. 3 hours. (Hewlett, Schultz)
Prerequisite: Permission of instructor.
The evolution of science and research related to forest and wildland resource management. An analysis of recent trends in public attitudes toward forest resource research support; the contribution of research to forest land management; the importance of the problem analysis. Required of all Forest Resources M.S. and Ph.D. candidates.

830. Fisheries and Wildlife Seminar. 1 hour. Max. 6 hours.
Weekly meetings reviewing recent advances in fishery and wildlife research and management.

846. Quantitative Models of Fish and Wildlife Populations.
Prerequisite: MAT 254 and STA 621.
Quantitative models of exploited populations; analytical approaches to population management, biological and economic yields; estimates of population parameters.

847. Mathematical Programming. (Fortson)
Prerequisite: Linear algebra and MAT 608.
Introduction to mathematical programming with emphasis on linear programming. Theory of simplex method and revised simplex method are developed in detail. Students are introduced to computer algorithms that facilitate solution of large scale linear programming problems. IBM mathematical programming language is covered. Formulation of linear programming models and interpretation of results are stressed. Various post-optimal procedures are discussed.

848. Quantitative Methods in Forest Management. (Clutter)
Prerequisite: MAT 254, STA 622, 700.
The application of statistical procedures and computer technology to problems in forest mensuration and forest management planning. Emphasis on growth and yield prediction, management information systems and quantitative decision-making procedures.

849. Sampling Techniques for Biological Populations. (Dress, Ware)
Prerequisite: STA 624
Application of statistical sampling procedures to problems of estimation in populations of interest to the forest resource manager.

850. (PAR) Diseases of Wildlife. (Hayes)

851. (PAR) Diseases of Wildlife. (Hayes)

898A. Fishery Management Problems. 1–15 hours.
Intensive study of an aspect of forest resources management at the doctoral level.

898B. Timber Management and Utilization Problems. 1–15 hours.
Intensive study of an aspect of forest resources management at the doctoral level.

898C. Water Resources Problems. 1–15 hours.
Intensive study of an aspect of forest resources management at the doctoral level.

898D. Planning and Administration Problems. 1–15 hours.
Intensive study of an aspect of forest resources management at the doctoral level.

898E. Wildlife Management Problems. 1–15 hours.
Intensive study of an aspect of forest resources management at the doctoral level.

921. Applied Research in Forest Resources. 1–15 hours.
Designed to provide individual guidance in the development of a significant project related to the student's major field of study. A written report presented in a format meeting professional standards must be submitted and subjected to review by an appropriate faculty committee.

930. Thesis. 5–50 hours.

GEOGRAPHY (GGY)

James O. Wheeler
(Geography-Geology-Speech Building, South Campus)

Work is offered in cultural, economic, physical and regional geography. Students in the various degree programs will normally develop a background in each of these divisions with a greater concentration elected within the division which embraces their thesis or dissertation research. In each division several lecture courses, seminars, and directed problems are available. The department also offers a substantial array of courses in geographic techniques including cartography, aerial photo interpretation, quantitative analysis and field research methods.

A modern air-conditioned building provides well-equipped teaching accommodations with cartographic and photo interpretation laboratories. Other facilities include individual student carrells, research rooms, and rooftop weather station. The University's science library, which includes a map and aerial photo library, is located nearby as is the statistical institute with its advanced computer and technical staff.

A reading knowledge of at least one foreign language is required in both the M.A. and Ph.D. programs at Georgia. For the Ph.D., the Department of Geography requires a reading knowledge of two languages, one of which will be either French, German, or Russian, or an advanced knowledge (including conversational ability) in one language; or a reading knowledge of one language plus an advanced knowledge of an acceptable alternative research tool.

HUMAN AND REGIONAL GEOGRAPHY

636. Geography of the South. (Prunty)
Prerequisite: 10 hours in courses from the departments of geography, history, or economics.
Geographical appraisal of the Southeastern states, including physical and human resources, settlement and population, agriculture, the extrative industries, transportation and present urban settlements. Current progress and major problems in Southeastern development.

638. Historical Geography of Eastern North America to 1783. (DeVorsey)
Prerequisite: 10 hours in history or geography, or an equivalent background in anthropology or archeology.
Evolution of settlement systems and their distributions in pre-Revolutionary North America; modification in natural landscapes and resources as the colonial cultural landscapes developed. Comparative geography of the early regions of eastern North Amerca.

639. Historical Geography of Eastern North America 1783–1860. (DeVorsey)
Prerequisite: 10 hours in history or geography, or an equivalent background in anthropology or archeology.
Expansion settlement systems and their distribution into the trans-Appalachian regions during the early 19th century. Comparative geography at mid-19th century of the regions of eastern North America.

641. Caribbean America. (Hoy)
Prerequisite: 10 hours in geography, or an equivalent background in Spanish, history, economics, or anthropology.
A regional analysis of the Caribbean area with emphasis upon the physical, cultural and economic factors affecting man's use of his resources.

642. South America. (Hoy)
Prerequisite: 10 hours in geography or an equivalent background in either Spanish or history.
A regional analysis of the geography of equatorial and southern South America including physical, cultural, and economic characteristics of the several regions. Stress upon prospects for expansion of settlement, developments of resources and growth of industries.

644. Europe and the Mediterranean. (DeVorsey)
Prerequisite: 10 hours in geography or history, political science, or modern languages.
A regional analysis of Europe, exclusive of the Soviet Union, designed to reveal the unique cultural, physical and economic character and problems of the several European nations.

646. Geography of the Soviet Union.
Prerequisite: 10 hours in geography or an equivalent background in history, political science, or economics.
A systematic and regional analysis of the industrial, agricultural, urban, population and physical geography of the USSR. Designed to evaluate, within the framework of the state's ideology and centrally controlled planned economy, its spatial organization and consequent economic and political strengths and weaknesses.

648. Geography of East and Southeast Asia. (Pannel)
Prerequisite: GGY 101, 102, or equivalent.
Cultural and physical geography of Southeast Asia including the coastal island groups. Land utilization, settlement, raw materials, population characteristics and distributions, as they relate to economic and political problems and potentials of the several nations. Emphasis on Japan, China, Phillippines, Indonesia.

650. Southwest and South Central Asia.
Prerequisite: Ten hours in geography or an equivalent background in history or political science.
A regional analysis of the geography of the Indian subcontinent and Southwest Asia. Emphasis on physical and human resources, settlement and economic development, and the strategic position of the region.

659. North American Urban Geography. (Kenyon)
Analysis of urban land occupance and its morphological-functional aspects. Introductory location theory in urban areas. Procedures in geographical analysis of agglomerated settlements.

660. North American Industrial Geography. (Fisher)
Theories in industrial location. Detailed locational analysis of selected manufacturing industries. Regional treatment of the spatial structure of North American manufacturing.

661. North American Rural Land Use. (Prunty)
Prerequisite: 10 hours from GGY 350, 358, 459, 460 or 10 hours in 300-level courses from economics, botany or agronomy approved by instructor.
Regional analysis of climate, soils, landform bases of American agriculture. Origins and dispersals of cultivated plants and livestock; American systems of rural land use and settlement in their regional settings. Contemporary problems in land use and its geographical analysis.

663. Geography of Transportation. (Heyl)
Prerequisite: GGY 358 or MKT 559.
Survey of historical, engineering and economic aspects of North American transport. Influence of modal characteristics on economic phenomena. Survey of regional commodity movements, at various scales. Principles and theories explaining role of transportation in regional planning, and in location of economic and political phenomena.

666. Field Problems in Urban Geography.
3 hours. Three laboratory periods. (Kenyon)
Prerequisite: GGY 350 and 459.
Field techniques in reconnaissance and analysis of urban areas.

668. Urban Transportation and Land Use. (Kenyon)
Prerequisite: GGY 350 and 459/659.
Reciprocal relations between urban transportation, both freight and passenger, and urban land use organization in terms of site, requirements, traffic generation characteristics and circulation problems.

672. Geography of World Population Distribution. (Stone)
Prerequisite: 10 hours in geography or consent of instructor.
A description and analysis of contemporary patterns in world and representative national distributions of people.

700AB. Concepts and Materials in Geography for Teachers. 3 hours each.
Prerequisite: Graduate status plus two years' teaching experience.
Evolution of the discipline, its current conceptual core; areal "element-complexes," systematic vs. regional analytical procedures. Systems for derivation of field data; standard bibliographical, statistical, cartographic and photogrammetric sources. Procedures in adapting information from the several sources to the classroom. Does not carry credit toward the M.A. or M.S. degrees.

701–702. Principles in Regional Geography for Teachers. 5 hours each. (Barnes, Heyl)
Prerequisite: 10 hours in geography or two years of teaching experience.
A course designed to inculcate principles and concepts in regional geography through intensive analysis of regions selected on a world-wide basis. Offered summer quarters. Does not carry graduate credit for the M.A. or M.S. degree.

801. Seminar in Geographic Thought and Methods. 4 hours. (Prunty)
Prerequisite: Graduate status.
Development of geographical philosophy and methods; contemporary methodological concepts and problems. Required for all graduate majors.

803. Seminar in North American Land Utilization. 3 hours. (Prunty)
Prerequisite: Graduate status.
Problems in North American land occupance and settlement geography.

830, 831, 832. Directed Problems in Economic and Cultural Geography. 3 hours each.
Prerequisite: GGY 459/659 or 460/660 or 461/661 and 801–802.
Problems in advanced economic and cultural geography. Topics may vary.

840, 841. Topics in Regional Geography. 3 hours each. (DeVorsey, Stone)
Prerequisite: Consent of the instructor.
Directed readings and research in regional geography. Topics may vary from year to year.

- a. The U.S. South (Prunty, DeVorsey)
- b. Anglo-America. (Prunty, DeVorsey)
- c. Latin America. (Hoy)
- d. Western Europe. (Stone)
- e. The Mediterranean Area.
- f. High Latitude Areas. (Shear, Stone)
- g. East and Southeast Asia. (Pannell)
- j. Soviet Union.

845. Field Geography in the Tropics. 12 hours.
Prerequisite: One year of graduate study in geography; working knowledge of Spanish strongly recommended.
Advanced geographical field research, conducted through the Organization for Tropical Studies, in selected tropical areas.

856. Location Theory and Spatial Systems. 3 hours. (Barnes)
Prerequisite: GGY 802 or MKT 559 or 566.
An examination of principles, theories and spatial system models developed to explain the location of man's activities.

860. Seminar in Economic Geography. 3 hours.
Topics and research problems in economic geography. Topics will vary from year to year.

860A. Urban Geography. 3 hours. (Kenyon)
Prerequisite: GGY 459/659.

860B. Geography of Transportation. 3 hours. (Wheeler)
Prerequisite: GGY 463/663.

860C. Industrial Geography. 3 hours. (Fisher)
Prerequisite: GGY 460/660.

872. Seminar in Geography of World Population Distribution. 3 hours. (Stone)
Prerequisite: GGY 472/672 and consent of instructor.
Locational analysis of population distribution in selected world areas.

PHYSICAL GEOGRAPHY

600. Advanced Terrain Analysis. (Woodruff)
Prerequisite: GGY 121, or GLY 125 or consent of instructor.
Identification of terrain parameters, their quantitative expression and areal variations. Emphasis on small stream basin analysis.

601. Advanced Climatology. 5 hours. Three lectures and two laboratory periods. (Shear)
Intensive study of controlling factors in climate.

Heat balance, evapotranspiration, water-budget concepts. Koeppen classification system in detail. Regional analysis of climatic types and anomalies.

602. North American Physiography. (Woodruff)
Prerequisite: GGY 121, GLY 125, GGY 400/600 or consent of instructor.
Detailed analysis of North American physiographic provinces, their subdivisions, and of geomorphic features and processes at work therein. Analysis via topographic maps, air photos, field work, semiindependent reports.

606. Synopic and Observational Meteorology. 5 hours. Three lectures and two laboratory periods. (Shear)
Prerequisite: GGY 120 plus either PCS 128 or 138.
Study and practice in meteorological observational procedures. Analysis of upper air and surface maps; the prognosis and forecasting problem.

610. Conservation Ecology and Resource Management.
Prerequisite: GGY 350, 358, or BIO 302.
An in-depth analysis of the interactions of man, culture, and environmental resources (including air, water, soil, mineral, biological, and human resources) with emphasis on environmental quality and resource management, planning, and decision-making. The course will include an examination of environmental resource problem in lesser developed societies.

616. Cartographic Design and Reproduction. 5 hours. Three lectures and two laboratory periods. (Muller)
Prerequisite: GGY 350 or consent of instructor.
Principles of design, readings from the literature, map reproduction methods and their effects on design. Practice in the production of thematic maps from the collection of data to their final form, use of advanced instruments.

620. Use and Interpretation of Aerial Photography. 5 hours. Three lectures and two 2-hour laboratories. (Barnes, Welch)
Prerequisite: Four or more quarters of geography, geology, environmental design, forestry, agriculture or permission of the instructor.
Principle of air photo interpretation and photogrammetry. Use of photos and photogrammetric instruments in planimetric, topographic and type mapping; in remote sensing; in making measurements and inventories; in sampling, and in planning. Project work involves the interpretation of terrain, vegetation and culture.

622. Advanced Photogrammetry. 3–5 hours. Lecture and laboratories arranged as required. (Welch)
Prerequisite: GGY 420/620.
Directed work on practical photogrammetric problems. Mastery of photogrammetric techniques and instruments as related to earth science applications.

623. Remote Sensing of Environment. 5 hours. Lectures, laboratories arranged as required. (Welch)
Prerequisite: PCS 128, GGY 420/620 or permission of instructor.
A consideration of the principles of remote sensing with emphasis on aerospace applications in the natural sciences. A review of fundamental properties of the electromagnetic spectrum followed by studies of remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems. Emphasis on the earth science applications of LANDSAT data. The course is oriented toward the particular interests of participating students.

625. Field Methods in Physical Geography. 4 hours. (Brook)
Prerequisite: 15 hours in geography, including GGY 350 or equivalent.
Methods in measurement, observation, recording and systhesis of field data in physical geography. Students conduct field research and present oral and written report (with maps) of findings.

629. Special Problems in Area Analysis. 3–5 hours.
Prerequisite: 15 hours in courses numbered above 300 in geography. Approval of instructor concerned and of head of department must be obtained for admission to this course prior to registration.

676. (BOT) Vegetation of North America.

802. Quantitative Methods in Area Analysis. 4 hours. (Wheeler)
Application of quantitative procedures to the analysis of research problems in geography. Required of all graduate majors.

812, 813, 814. Directed Problems in Climate and Water. 3 hours each. (Shear)
Prerequisite: GGY 401 or 404.
Advanced problems in climatology and water resources. Topics and areas involved may vary.

816, 817, 818. Problems in Geomorphology. 3 hours each. (Woodruff)
Prerequisite: GGY 400/600 and/or 402/602.
Advanced problems in geomorphology and

physiography. Topics and areas under investigation may vary.

821. Advanced Problems in Cartography. 3 hours.
Prerequisite: GGY 802.
Special problems in the application of cartographic and related techniques to regional analysis. Emphasis on problems involving current research. Required of all graduate majors.

825. Problems in Remote Sensing of Environment I. 3 hours. (Welch)
Prerequisite: GGY 420/620, 422/622, or 423/623.
Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

826. Problems in Remote Sensing of Environment II. 3 hours. (Welch)
Prerequisite: GGY 825.
Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

827. Problems in Remote Sensing of Environment III. 3 hours. (Welch)
Prerequisite: GGY 826.
Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

930. Thesis. 5–50 hours.

GEOLOGY (GLY)

Norman Herz
(Geography-Geology-Speech Building, South Campus)

Doctoral language requirement: one or two languages, at the discretion of the student's advisory committee, with the department responsible for determining proficiency in the second language.

The department offers instruction and opportunities for research in petrology, geochemistry, stratigraphy, marine geology, economic geology, paleontology, structural geology, hydrogeology, ecology, mathematical geology, isotope geology, and other fields. Graduate programs leading to the M.S. and Ph.D. are individually arranged to fit each student and his/her background.

Facilities for graduate training and research include analytical and experimental laboratories containing X-ray diffraction and fluorescence equipment, emission and atomic absorption spectrographs, electron microscopes, and an electron microprobe. Other facilities include a mass-spectrograph laboratory, a carbon-14 dating laboratory, a neutron activation analysis laboratory, paleontological and palynological laboratories, and laboratories for sample preparation, optical determination, and photomicroscopy. Geochemical laboratories house cold seal "bombs," high P-T large volume autoclaves and NBS type tetrahedral anvil. Geophysical laboratories house equipment for compressibility, phase transformation and gas-solid interaction studies, and for studies by triaxial stress techniques. The University's Marine Institute on Sapelo Island and the Skidaway Institute of Oceanography at Savannah provide facilities for research in marine geology. Companion facilities include the University computer center, scanning electron microscope laboratory, field vehicles, instrument shops, and rock, mineral, and fossil collections.

603. Invertebrate Paleontology. 5 hours. Three lectures and two laboratory periods. (Frey)
Prerequisite: GLY 126 or BIO 102.
Study of fossil invertebrates, emphasizing relationships in anatomical structures of living and

extinct organisms. Classification and geologic history of all invertebrate phyla.

604. Geology Seminar. 1–6 hours.
Reviews and discussions of classical studies, lectures on current research and new developments. Special lectures by visiting scientists.

605. Sedimentation and Stratigraphy.
5 hours. Two lectures and three laboratory periods. (Rich, Carver)
Prerequisite: GLY 126, GLY 323 recommended.
The origin and distribution of sedimentary rocks. Environmental conditions involved in the transportation and deposition of sediments. Vertical sequences and lateral correlations in layered rocks. Typical stratigraphic associations.

607. Geology of the Southern States.
5 hours. Three lectures and two laboratory periods. (Carpenter)
Prerequisite: GLY 405/605.
Structural and stratigraphic relationships in southern geology analyzed in terms of distribution, lithology, and their economic implications.

608. Optical Mineralogy. 5 hours. Three lectures and two laboratory periods. (Whitney)
Prerequisite: GLY 320 or 321.
The optical properties of minerals. Determination of minerals with the polarizing microscope. Introduction to universal stage techniques, point count, etch and stain methods.

609. Marine Geology. 5 hours. Four lectures and one laboratory period. (Pinet)
Prerequisite: GLY 405/605, or GLY 125–126, or permission of instructor.
Physiography, structure, and origin of ocean basins. Marine sediments and processes. Problems in marine geologic research.

611. Principles of Geochemistry. 3 hours.
Prerequisite: CHM 122, PCS 128, and GLY 323.
Composition of the earth. Distribution of elements in minerals and rocks. Principles governing the migration and concentration of elements. Introduction to nuclear geology and geochemical prospecting.

612. Palynology. 5 hours. Three lectures and two laboratory periods. (Stanley)
Prerequisite: GLY 126, BIO 102, or approval of instructor.
The application of pollen and spore analysis of geological, botanical, ecological, aerobiological, and archaeological studies with practical experience in extraction, identification and interpretation of pollen and spore diagrams.

613. Paleobotany. 5 hours. Three lectures and two laboratory periods. (Stanley)
Prerequisite: GLY 126, BIO 102 or approval of instructor.
Phylogeny and taxonomy of fossil plants with emphasis on their use in stratigraphic, paleoclimatic and paleoecological studies.

614. Crystallography (Morphological and X-ray). 5 hours. Three lectures and two laboratory periods. (Hurst)
Prerequisite: MAT 254, PCS 128.
Symmetry elements, crystal projections, point groups, space groups, crystal systems, crystal notation, optical goniometry. Determination of cell dimensions and space group, X-ray powder methods, single crystal X-ray methods.

622. Hydrogeology. 5 hours. Four lectures and one laboratory period. (Carver)
Prerequisite: GLY 125, and one of the following: GLY 126, AEN 325, AEN 356, FRS 351, and FRS 404.
The hydrological cycle and a quantitative treatment of its variations. Permeability and porosity of geological materials; soil water; quality, quantity and movement of ground water; quantitative methods in ground water studies; the chemistry of surface and ground waters. Runoff and sheet erosion, streamflow, quantitative methods in surface flow and stream forecasting, processes of erosion and sedimentation; physical control of surface and sub-surface flow.

625. Field Methods in Geology. 3 hours. One lecture and two laboratory periods. (Carver)
Prerequisite: 15 hours in geology courses numbered above 200.
Methods in measurement, observation, recording, and synthesis of field data. Field analysis of all features in one small type area required, including completed maps and written reports in which recorded data are correlated and synthesized.

626. Geological Mapping of Saprolite. 3 hours. One lecture and two laboratory periods. (Hurst)
Prerequisite: 15 hours in geology courses numbered above 200.
The weathering processes of saprolitization. The recognition of parent rock by the field examination of saprolite. Geologic mapping in deeply weathered terrains.

627. Geology Field Camp. 5 hours. Four weeks of field training arranged between end of Spring and start of Fall quarters. (Dallmeyer)
Prerequisite: GLY 321, 323, and 332.
Use of various instruments and field techniques in geology. Introduction to local stratigraphy and structure; section measuring; principles of geologic mapping; mapping, drafting, and report writing.

630. Clay Mineralogy. 4 hours. Three lectures and one laboratory period. (Hurst)
Prerequisite: GLY 405, CHM 121; GLY 321.

Structure and properties of clay minerals. Effects of environmental factors on their origin and uses. Identification of clay minerals by optical and X-ray methods.

631. Metallic Ore Deposits. 5 hours. Five lectures plus field trips. (Carpenter, Allard)
Prerequisite: GLY 321 and 332.
Classification and origin of metallic ore deposits; relationships between mineral deposits and host rocks; ore controls. Discussion of the major deposits of base metals, precious metals and ferrous metals.

632. Nonmetallic Ore Deposits. 5 hours. Five lectures plus field trips. (Carver, Gonzales, Herz)
Prerequisite: GLY 321 and 332.
Classification and origin of nonmetallic (industrial) mineral deposits; governing geologic factors. Economics of nonmetallic mineral production.

634. Mineralogy of Opaque Minerals. 2 hours. Two laboratory periods. (Carpenter)
Prerequisite: GLY 408/608.
Physical and optical properties of opaque minerals. Identification of opaque minerals by mineragraphic methods—reflectivity, microhardness, and rotation properties.

635. Geochemistry and Petrology of Ore Deposits. 5 hours. Three lectures and two laboratory periods. (Carpenter, Herz, Wenner)
Prerequisite: CHM 121; GLY 634.
Applications of geochemistry and isotope geology to problems of ore deposits. Petrology of major classes of ore deposits.

636. Exploration and Evaluation of Ore Deposits. 5 hours. Four lectures and one laboratory period. (Koch)
Prerequisite: GLY 321 and 332.
Exploration methods. Surface expression of buried ore deposits. Planning of drilling programs. Computation and presentation of ore reserves. Exploitation methods. Mine valuation and financing.

637. Geostatistics. 5 hours. Four lectures and one laboratory period. (Koch).
Prerequisite: STA 200 or 421.
Statistics applied to geology. Distributions, sampling, inference, analysis of variance, distributions and transformations, geological sampling, variability in geological data.

638. Geology of Energy Resources.
5 hours. Four lectures and one laboratory period plus field trips. (Gonzales)
Prerequisite: GLY 332 and 405.
Origin and occurrence of principal geologic energy resources: petroleum, coal and uranium. Discussion of tar sands, oil shale, synthetic hydrocarbons from coal and geothermal steam. Emphasis on major deposits, reserves, exploration practices, production methods, economics and environmental considerations. Domestic energy policy.

641, 642, 643. Introduction to Research in (Field to be inserted). 2–5 hours.
An introduction to the literature of geology, research procedures and instrumental techniques.
- a. Mineralogy
- b. Geochemistry
- c. Geophysics
- d. Oceanography
- e. Petrography
- f. Petrology
- g. Stratigraphy
- j. Paleontology
- k. Palynology

644. Principles of Chemical Mineralogy.
Prerequisite: CHM 122; MAT 254; PCS 128
The study and application of thermochemical principles and methods to problems in mineralogy, petrology, and geochemistry.

645. Geochronology and Isotope Geology. 3–5 hours.
Prerequisite: CHM 122, PCS 128, GLY 323, or consent of instructor.
Introduction to the theory and application of age determination of natural materials; application of isotopes as tracers in natural processes and as geothemometers.

650. Vertebrate Paleontology. 5 hours. Three lectures and two laboratory periods. (Laerm)
Prerequisite: GLY 126 or ZOO 226.
The evolution of backboned animals as documented by the fossil record. Taxonomy and ecology of fossil vertebrates.

651. Micropaleontology. 5 hours. Three lectures and two laboratory periods. (Sen Gupta)
Prerequisite: GLY 126 or BIO 102.
Morphology and systematics of principal groups of animal microfossils; stratigraphic, paleoecologic and phylogenetic relationships; with particular emphasis on Foraminifera.

652. Introduction to Paleoecology. 5 hours. Four lectures and one laboratory period. (Frey)
Prerequisite: GLY 403/603.
Study of factors governing the abundance and distribution of ancient marine and terrestrial organisms. Comparisons with ecology of extant invertebrates, vertebrates, and plants. Survey of ecological principles; adaptations and modes of life; physical, chemical, and biological environmental parameters; marine and terrestrial habitats. Preservability and taxonomy of fossil

assemblages. Paleoecology as a tool in sedimentary geology.

660. Solid Earth Geophysics. (Erickson)
Prerequisite: GLY 323, PCS 128 or equivalent, and MAT 254.
Application of the principles of physics to understanding the dynamics and bulk properties of the earth. Topics covered will include earthquake seismology, geodesy, geomagnetism, the thermal history of the earth, and the composition and state of the earth's interior.

661. Planetary Geology. 4 hours. Two lectures, one seminar, and one laboratory period. (Howard)
Prerequisite: GLY 323 and 332.
Geology of the moon and extraterrestrial planets; composition, structure, planetary geological processes, origin, and history. Literature and techniques of astrogeology.

662. Exploration Geophysics. 5 hours. Three lectures and two laboratory periods. (Erickson)
Prerequisite: PCS 128, MAT 254, GLY 323 and 332.
Application of the principles of geophysics to determine the presence and extent of economically valuable deposits of minerals or energy sources beneath the earth's surface. The course will cover gravity, seismic reflection and refraction, magnetic, and electrical techniques.

663. Photogeology. 4 hours. Two lectures and two laboratory period. (Howard)
Prerequisite: GLY 323, 332; GGY 420/620; recommended—GLY 405/605.
Advanced principles of photogeology. Geologic interpretations and measurement from aerial photography. An introduction to geologic interpretation of color photography and spacecraft imagery of planetary surfaces.

700. Geology for Teachers. 5 hours. Lecture and demonstration.
Prerequisite: 20 hours physical and/or biological sciences, at least 5 of which must be chemistry. Graduate credit will be limited to candidates for the Master of Education degree.
Cultural and practical aspects of earth study. Identification of common rocks and minerals. Geologic principles and processes; outline of earth's history.

701. Principles of Science for Teachers—Earth Science. 5 hours. Three 2-hour lecture-demonstrations, two 2-hour laboratory sessions, and a full-day field trip on alternate weeks.
This course in earth science is designed specifically for elementary and junior high school teachers in science. Not open to geology graduate students.

720. (LAR) Environmental Geology. 5 hours. Four lectures and one laboratory period plus field trips. (Gonzales)
Prerequisite: Enrolled in professional programs in LAR or permission of instructor.
Discussion of geologic materials and processes with an emphasis on environmental interpretation for planning, land use and construction practices. Role of water, geologic hazards and geotechnical inputs to environmental-impact assessment. Site evaluation, sequential land use, mined-land reclamation and waste management. (Course not open to geology majors or geology graduate students.)

801, 802, 803, 804. Advanced Topics in (Field to be inserted). 1–5 hours.
Intensive study under the direction of staff members on approved topics.

a. Mineralogy
b. Geochemistry
c. Geophysics
d. Oceanography
e. Ore Deposits
f. Palynology
g. Petrology
j. Sedimentation
k. Stratigraphy
m. Structural Geology
n. Paleontology

805. Advanced Stratigraphy. 3 hours. (Rich)
Prerequisite: GLY 403 and 405.
Major concepts in lithostratigraphy and biostratigraphy. Paleozoic, Mesozoic and Cenozoic stratigraphic sequences in North America.

810, 811, 812. Petrography and Petrology. 810-Igneous; 811-Sedimentary; 812-Metamorphic. 3 hours each. Three laboratory periods. (Allard, Rich, Whitney)
Prerequisite: GLY 405 and 408.
Study of rocks in thin section. Interpretation of textures, structures, and mineral associations.

815. Special Problems in Sedimentology and Oceanography. 1–5 hours.
Prerequisite: GLY 609.
A course to allow students to pursue intensive study under the direction of the staff on approved problems in sedimentology and oceanography.

816. Advanced Igneous Petrology. 3–5 hours. (Stormer, Whitney)
Prerequisite: GLY 444/644 and 810.
Mineral interactions in igneous rocks; phase transformations; thermodynamic parameters; element distribution and fractionation; isotopic distribution; acquisition and analysis of data pertaining to the origin, intrusion, and crystallization of magmatic material.

817. Experimental Petrology. 3–5 hours. (Hurst)
Prerequisite: GLY 408/608 and 414/614 or 430/630.
Synthesis of minerals and rocks; high temperature-high pressure experimentation. Crystal growth.

820. Geotectonics. 3–5 hours. (Dallmeyer)
Prerequisite: GLY 323, 332, 405/605 or consent of instructor.
Analyses of the geometry and global distribution of major tectonic features. Emphasis is on tectonic processes and the geological and geophysical evidence bearing on their origin. The role of such processes in the structural evolution of the Appalachians is evaluated through seminars and field trips.

821. Advanced Mineralogy. (Stormer)
Prerequisite: GLY 321 and 414/614.
Physical and chemical mineralogy of common silicates and sulfides. Solid solution series, stoichiometry, order-disorder and phase transitions in minerals. Crystal growth and crystal defects. Isomorphism and polymorphism.

822. Advanced Metamorphic Petrology. 3–5 hours. (Dallmeyer)
Prerequisite: GLY 816.
Mineral interactions in metamorphic rocks as functions of pressure, temperature, and time; phase transformations; effects of environmental fluids and gases on metamorphic rock systems; exercises in data acquisition and analysis and calculations of thermodynamic parameters.

823. Structural Analysis of Metamorphic Tectonites. 5 hours. Three lectures and two laboratory periods, several field trips. (Dallmeyer)
Prerequisite: GLY 332; recommended—GLY 812.
Interpretation of mesoscopic and megascopic structures of metamorphic tectonites. Field and laboratory methods for correlation of strain and three-dimensional geometric analysis. Examination of the temporal relationship between deformation and metamorphism.

825. Plate Tectonics. 3–5 hours. (Herz)
Prerequisite: GLY 323, 332, 405/605, and at least three other senior division or graduate geology courses.
Orogenic belts and world rift system; physical properties, chemical composition, and mineralogy of the earth's mantle; structure and petrology of the earth's crust; geosynclines and the orogenic cycle; continental drift; paleomagnetism; polar wandering; sea floor spreading.

826. Geological Data Analysis. 3–5 hours. (Koch)
Prerequisite: GLY 437/637.
Analysis of geological data with emphasis on statistical methods. Geological trends; multivariate data analysis; ratios and variables of constant sum; problems in theoretical and applied geology.

830. Marine Ecology and Taphonomy. 5 hours. Lectures, laboratory work, and field trips; summer course. (Frey)
Prerequisite: GLY 452/652 or ZOO 460/660.
Paleoecological significance of present-day marine organisms and their potential means of preservation as fossils. Field surveys of (1) living organisms; their habits and habitats, (2) the proportion of organisms potentially apt to be preserved, either as skeletal parts or as tracks, trails, and burrows, (3) characteristic remains of dead organisms; how these accumulate in reponse to predators and scavengers, currents, deposition, and biogenic reworking, and (4) the degree to which accumulated preservable remains of organisms are apt to reflect the original density, distribution, and habitat of the organisms. (To be taught at the Skidaway Institute of Oceanography, Savannah.)

831. Coastal Geology of Southeastern United States. 5 hours. Lectures and field trips; summer course. (Henry)
Prerequisite: GLY 405/605, 409/609.
Lectures and field studies on the geologic history and development of Quaternary coastal features from Cape Hatteras, North Carolina, to Key West, Florida. Emphasis on field excursions to selected clastic and carbonate rock exposures and present-day depositional environments. Course based at Skidaway Institute of Oceanography, Savannah.

930. Thesis. 5–50 hours.

GERMANIC AND SLAVIC LANGUAGES

Alfred G. Steer
(Meigs Hall, North Campus)

The department offers work in all the major fields of Germanistic studies. Required for the master's degree is a reading knowledge of one modern foreign language besides German, successful completion of one seminar and a course in German history (recommended German/History 652P). Non-natives who have not had recent residence in Germany are expected to take 10 to 15 hours of their course work at the University System of Georgia's Studies Abroad Center in Germany. Required of candidates for all the education degrees, and recommended for all candidates, is experience in constructing language laboratory exercises, recording them, and evaluating their effect on beginning students.

GERMAN (GER)

610. Advanced Conversation and Composition.
Prerequisite: GER 210 or equivalent.
Advanced oral-aural language study including phonetics and linguistics, combined with advanced grammar and stylistics.

620. German Culture.
Prerequisite: GER 201 or 202 or equivalent.
German cultural history from Luther to the present.

625. A Survey of German Literature.
Prerequisite: GER 201 or 202 or equivalent.
German literature from the Old High German Period to the present. Texts from the older period will be read in New High German translation.

630. German Drama Since Lessing I.
Prerequisite: GER 201 or 202 or equivalent.
Reading and interpretation of texts in their historical and literary-historical context.

632. The Age of Goethe I.
Prerequisite: GER 201 or 202 or equivalent.
The Sturm and Drang group, including Goethe and his role in it, Schiller's work, other contemporaries, including Hölderlin and ending with Schiller's death in 1805.

633. The Age of Goethe II.
Prerequisite: GER 201 or 202 or equivalent.
The older Goethe, from Schiller's death in 1805 to 1812. Emphasis on Goethe's mature works, *Wahlverwandtschaften*, *Westöstlicher Divan*, and *Wilhelm Meisters Wanderjahre.*

634. Goethe's Faust I and II.
Prerequisite: GER 201 or 202 or equivalent.
Reading and interpretation.

635. Novelle of the 19th & 20th Centuries.
Prerequisite: GER 201 or 202 or equivalent.
The development of the genre, reading and interpretation of representative texts.

636. German Romanticism.
Prerequisite: te: GER 201 or 202 or equivalent.
German Romanticism from 1790 to 1825. The study of this movement in regard to its literary, historical and cultural context.

637. Modern German Literature.
Prerequisite: GER 201 or 202 or equivalent.
Reading and interpretation of representative samples of 20th century literature.

638. (LIN) Contrastive Grammar: German-English
Prerequisite: Two years of college German or permission of instructor.
The course prepares future teachers of German to isolate and identify pedagogically important structural similarities and differences.

639. The German Lyric.
Prerequisite: GER 201 and 202 or permission of instructor.
A study of German lyrics and ballads from the time of the Minnesingers to the present.

641. Modern German Prose.
Prerequisite: GER 201 and 202 or permission of instructor.
Reading and interpretation of selected important novels and novelle.

646. (LIN) Linguistic Structure of German.
Prerequisite: Two years of college German or permission of instructor.
Emphasis on phonetics, phonology and intonation, with introduction to the overall structure of German.

652P. (HIS) Survey of German History Since the Reformation. (Tresp)
Prerequisite: 20 hours of German above 104 or permission of the instructor.

An interpretative survey of German history since the Reformation. The impact of political developments and cultural trends will be stressed. The German language will be used in lectures and seminar sessions.

781. (EFL, FR, SP) Problems of Teaching Modern Foreign Languages.

830. (LIN) History of the German Language.
Study of the origins of modern standard German from the Indo-European parent language, through proto-Germanic, Old and Middle High German, and the early modern period.

832. (LIN) Gothic.
Morphology, phonology, and history of the Gothic language on the basis of the Gothic New Testament with emphasis on the development of earlier languages and the development into later language forms.

833. (LIN) Old High German.
The linguistic structure of OHG and its importance in the development of Modern Standard German and the various nonstandard present day dialects. Readings in the literature of the OHG period.

840. (LIN) Middle High German.
Phonology and grammar of the language, with extensive readings in the prose, the epic poetry and the lyric poetry of the Middle High German era.

841. Proseminar.
Introduction to bibliography and methodology of research in German literature and linguistics.

850G. (LIN) Seminar.
Advanced research on topics to be changed annually.

851, 852. Seminar. 5 hours each.
Advanced research on topics to be changed annually.

900. Problems in German Studies.
Prerequisite: Permission of Graduate Coordinator and instructor.
Designed to permit advanced students to do specialized work including a research paper on an individual basis with a specific professor in areas not now covered by a course.

930. Thesis. 5–50 hours.

RUSSIAN (RUS)

601. Introduction to Modern Russian Literature.
A study of representative works in the original language. The course is conducted in Russian.

602. Introduction to Modern Russian Literature.
A study of representative works in the original language. The course is conducted in Russian.

605. Topics in Russian Literature in Translation.
Course will cover various topics in Russian literature. The classes will be conducted in English, and all readings will be done in translation.

HISTORY (HIS)

Gilbert C. Fite
(LeConte Hall, North Campus)

The history department offers work leading to the M.A., M.A.T. and the Ph.D. degrees. Students preparing for the M.A. must take eight courses, including History 893G and two other 800-level courses. Further requirements are reading competence in one foreign language, a thesis, and an oral examination. M.A.T. candidates must meet requirements for the Georgia State Board of Education's T-4 Certificate and are required to take eleven graduate level courses. There is no thesis or language required. Further details of this program may be found on page 31. Students preparing for the Ph.D. degree must acquire a satisfactory knowledge of five fields of history, determined by both oral and written examinations. Reading competence in two foreign languages is required of all doctoral candidates. With approval of his major professor, the student may substitute Statistics 621 or 622 for one language. Dissertations may be written in American, British, European, or Latin American history.

The graduate program stresses research and writing under faculty guidance. In addition, students possessing the M.A. degree may also receive practical experience in teaching by holding teaching assistantships. The department awards a number of teaching assistantships and departmental non-teaching assistantships each year. Application for these should be made directly to the head of the department.

611F. American Colonies to 1688.
A study of the foundations of the American colonies in the Seventeenth Century. Attention will be paid to the transplanting of European institutions to America and the transforming of these institutions.

611M. American Colonies. (Herndon, Spalding)
Early settlements in North America by the English, French, Spanish, and Dutch; shaping of American society by adaptation of old world forces to new world environment.

611N. Everyday Life and Customs in Colonial America. (Spalding)
The Atlantic Frontier, the development of Colonial life, and the emergence of Colonial arts and customs will be emphasized. The class structure of the colonies will be analyzed. Of prime concern will be the growth of American self-awareness as mirrored in colonial history and literature.

611T. Revolution and Rise of the American Nation. (Herndon, Spalding)
American history from 1763 to 1800; the Revolution; the Articles of Confederation; writing and adoption of the Federal Constitution; the administration of George Washington and John Adams.

612P. The Trans-Mississippi West. (Broussard, Fite)
American political, social, and economic institutions as they develop in the region west of the Mississippi River. The impact of the frontier upon the American peopwe.

612T. The Ante-Bellum South. (Boney)
Begins with the late colonial period, when settlers were pushing across the southern Appalachians, and continues to the secession of the South. Southern life and civilization will be studied.

613F. The Civil War Period of American History. (Boney, Thomas)
Civilian activities of the people, problems of the Northern and Southern governments. Emphasis on the Confederacy. Only major military campaigns will be considered.

613P. The Reconstruction Period. (Wynes)
The reconstruction of the South along all lines, as well as the remaking of the North. Beginnings will be found during the Civil War; the process will be continued to 1877.

614C. The South Since Reconstruction. (Wynes, Holmes)
The South since the Reconstruction period with emphasis upon social, economic, and political developments of the region.

614F. Recent American History, 1877 to 1917. (Holmes)
Beginning with the presidency of Rutherford B. Hayes, this course will continue through the administration of William McKinley. Politics will be overshadowed by the social and economic picture.

614P. Recent America, 1917 to 1945. (Leary)
The history of political, economic, social and cultural development during the present century.

614T. Recent American History, 1945–Present. (Bartley)
The growth of American society since World War II. An examination of the expansion of the

economy, foreign and domestic politics, and American society in the post-modern period.

615E. Constitutional History of the United States. (Anderson)
A study of how actual political and social conditions in American history have produced fundamental constitutional principles and practices.

615T. American Cultural History Since the Mid-Nineteenth Century. (Crowe)
A study of the principal developments in American philosophy, science, literature and art.

615W. Women in American History and Culture. (Crowe)
An introduction to the social science background of the American Feminist movement. Emphasis will be placed on women in nineteenth century social movements, in the drive for suffrage and liberation and in contemporary feminism.

616E. American Ideals in Foreign Policy. (Vinson)
An analysis of the aims, ideals, and methods that have determined American foreign policy from 1776 to the present.

616M. Problems in American Foreign Policy, 1776–1901. (Langley)
A study of selected problems with emphasis on reading.

616P. Problems in American Foreign Policy, 1901–Present. (Vinson, Eubanks)
A study and critical evaluation of American foreign policy in the 20th century through selected reading, discussion, and individual research.

617M. History of Georgia.
Georgia from its first occupation by the Spaniards to the present. A comprehensive discussion of all aspects of Georgia's development.

618P. Modern Black America.
The 20th century struggle for civil rights, black identity and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodation, integration, and separatism.

631F. The Caribbean Area. (Broussard)
Conquest and settlement of the islands and Caribbean periphery by the Spanish, the intrusions by the French, Dutch, and English, and the more recent developments of the 19th and 20th centuries.

631P. The Republics of Southern South America. (Murdoch)
The history of the political, economic, social, and cultural development of Argentina, Brazil, and Chile since the struggle for independence with a brief summary of the late colonial period.

632F. Cultural History of South American Colonies. (Vogt)
The philosophical argument attending the conquest, the intellectual defense of the Indians, the theory of Spanish colonial government, and university life to 1825.

632P. Origin of Independence in the Spanish. (Broussard)
Intellectual preparation, colonial grievances, breakdown of government in Spain, and the strikes for independence from Mexico City to Buenos Aires.

633F. Inter-American Problems. (Langley)
Economic, social and political problems of Latin America since independence; cooperative efforts of the United States in seeking solutions within the framework of the Pan American movement and the Organization of American States.

633P. Latin America in the Twentieth Century. (Murdoch)
Twentieth century influences that are producing socioeconomic unrest in much of Latin America; efforts of the United States and private organizations to combat the spread of these conditions.

637M. Ancient Near East. (Jones)
A survey of the ancient peoples and cultures of the Near East from earliest historical times through the Persian empire.

638M. Greek History. (Piper)
A study of Greek history through the time of Alexander the Great.

638P. Hellenistic History. (Piper)
Problems in Hellenistic History from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, or Ptolemaic dynasty.

639F. Roman Republic. (Piper)
A study of Roman history to the end of the republic.

639P. Roman Empire. (Piper)
History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

645F. Norman and Early Angevin England, 1066–1307. (Alexander)
A detailed study of English political, constitutional, legal, and feudal history from the Norman conquest to the death of Edward I.

645G. Later Medieval England, 1307–1485. (Alexander)
A detailed investigation of political, economic, social and intellectual developments from the reign of Edward II through that of Richard III.

645M. Medieval Intellectual Survey. (Berrigan)
Survey of medieval intellectual history. An examination of European intellectual development from Constantine to Dante.

645P. Medieval France, 987–1498. (Alexander)
An intensive study of France under the Capetian and early Valois kings. Emphasis will be placed upon political, feudal, and social history, unified by the story of the growth of the national state focussed upon the king.

650M. Intellectual History of the Renaissance. (Berrigan)
Survey of Renaissance intellectual history. An examination of European intellectual history from Dante to Erasmus.

650P. Intellectual History of Early Modern Europe. (Haag)
Intellectual history of early modern Europe. An examination of intellectual developments in 16th and 17th century Europe.

650S. Intellectual History of Modern Europe, 1700–1815. (Haag)
An historical study of European thought from 1700 to 1815, with emphasis on the interrelationship between political development and dominant ideas and beliefs.

650W. Intellectual History of Modern Europe, 1815–Present. (Haag)
An historical study of European thought from 1815–1950 with emphasis upon the interrelationship between political development and dominant ideas and beliefs.

651E. History of the Reformation. (Irwin)
Intensive study of selected aspects of the Reformation with emphasis on the late medieval background, the theology of the major reformers, the establishment of the major denominations, the Council of Trent and modern historigraphy of the Reformation.

652F. The French Revolution and Napoleon. (Kennett)
Europe from 1789 to 1815, centering upon events in France. Stress is placed upon the political, diplomatic and military history of the era.

652P. (GER) Deutsche Geschichte Seit Der Reformation Im Uberblick. (Tresp, Ziemke)
Prerequisite: 20 hours of German above 104 or special permission of instructor.
An interpretative survey of German history since the Reformation. The German language will be used in lectures and seminar sessions.

653E. Nineteenth Century Europe. (Heggoy, Jones, Spencer)
A history of Europe from 1814 to 1914. The main political, international, social, economic, cultural, and intellectual movements will be stressed.

653F. Twentieth Century Europe. (Gasiorowski, Mamatey, Ziemke)
The history of Europe from 1914 to the present. The main political, social, economic, cultural, and intellectual movements will be stressed.

653M. France in the Nineteenth and Twentieth Centuries. (Spencer, Kenneth, Heggoy)
A survey of political, social, cultural and economic developments in France since the fall of Napoleon I.

653P. The Emergence of Modern Germany 1800–1914. (Tresp, Ziemke)
A survey of political, social, and cultural developments in 19th century Germany (1800–1914). Domestic events will be stressed.

654F. Spain: 1500 to the Present. (Murdoch)
A survey of political, social and economic development of Spain and Portugal from 1500 to the present with emphasis on the period since World War I and on contemporary colonial problems.

654P. Portugal: 1400 to the Present. (Vogt)
A survey of political, social, and cultural development of Spain and Portugal from crusades against the Moors to the end of the Hapsburg dynasty, including colonial expansion into North America.

657A. Military History to 1815. (Kennett)
The history of warfare in ancient, medieval and early modern times. Its techniques, theory and role in the evolution of western society.

657B. Recent Military History. (Ziemke)
The history of warfare and the development of weapons, techniques, and military thought in the 19th and 20th centuries.

657E. The Age of World War I. (Ziemke, Gasiorowski, Rader)
The origins of modern world politics, culminating in World War I and the peace settlement of 1918–24. The interaction between world politics and the 20th century ideologies-welfare-state, democracy, fascism, and communism and the intellectual and technological roots of these ideologies.

657F. The Age of World War II. (Gasiorowski, Mamatey, Ziemke, Rader)
A continuation of History 657E. The interwar

period, the war, and its consequences with emphasis on Europe.

657M. Germany under the Weimar Republic to the Present. (Tresp, Ziemke)
A survey of political and social developments since 1918. Emphasis will be given to the breakdown of the Weimar Republic and the rise and structure of Naziism.

657T. The Age of the Cold War. (Ziemke, Gasiorowski, Mamatey)
A continuation of History 657E. The rise of Nazi Germany and Soviet Russia as world powers and the origins of World War II. The bi-polar world politics of the 1940's, and the more complicated world politics produced in the 1950's by the rise of the non-Western world.

664E. The Tudor Period of English History, 1485–1603. (McPherson)
England's emergence as a modern state. Her political, religious, economic, social, and intellectual development during the Renaissance and Reformation.

664M. The Stuart Period of English History, 1603–1714. (McPherson)
England during the evolution of parliamentary supremacy; problems leading to the civil war, interregnum, restoration, and revolution settlement.

664T. Constitutional History of England. (McPherson)
Development of constitutional and legal institutions of England from Saxon times to the present.

665G. Modern British History, 1868–Present. (Jones)
A survey of the political, economic, social and diplomatic developments in Great Britain during the period 1868–present.

665M. British Empire and Commonwealth. (Jones)
A survey of the British Empire from the 15th century to 1922.

665N. Anglo-American Tradition in World Affairs. (Jones)
A survey of British and American influence in the development of governmental institutions since World War I.

670F. Russia from Early Times to 1725. (Sokol)
Primary attention focused on the Muscovite period between Ivan the Great and Peter the Great. Foreign affairs and internal development, including the Westernization process, will receive approximately equal attention.

670P. Imperial Russia, 1725–1881. (Sokol)
The St. Petersburg period of Russian history to the assassination of Alexander II, and the rise of the generation which created Soviet Russia. Russian influence in world affairs will be interpreted in the light of basic changes in domestic policy after the French Revolution.

671F. Russian Revolution & Rise of Stalin, 1881–1927. (Rader)
The final phase of the Russian revolutionary movement and the collapse of the empire under the impact of the wars of 1904–05 and 1914–17. The 1917 revolutions, Bolshevik victory, and the period of the new economic policy.

671P. Soviet Union Since 1927. (Rader)
Soviet Union from Stalin Revolution to present. Stresses domestic developments and rise of USSR to world power. Post-Stalin internal changes and polycentrism in Communist world.

672E. Poland and the Baltic Since 1697. (Gasiorowski)
A survey of political, social, economic, and cultural developments in Poland since 1697 and a sketch of the evolution of Estonia, Latvia and Lithuania.

672M. Middle Danube Region Since 1648. (Mamatey)
History of the peoples of the former Hapsburg (Austro-Hungarian) empire and its successor states (Austria, Hungary, Czechoslovakia, Yugoslavia, and Rumania) from the Peace of Westphalia (1648) to the present.

672T. The Balkans Since 1699. (Rader)
Balkan states from national liberation struggle against Ottoman Empire to present. Emphasizes impact of foreign powers, especially Russia, and political-social changes since independence.

678A. History of China I: The Traditional Order from Prehistory to the Sung Dynasty. (Ganschow)
An examination of the political, economic, social, and cultural life of ancient China from its earliest beginnings to the Sung Dynasty. Emphasis is on traditional Confucianism, Taoism, and Buddhism, the primary molders of Chinese culture.

678B. History of China II: The Transitional State from the Sung Dynasty to the 1911 Revolution. (Ganschow)
An examination of significant changes in Chinese culture, as well as an analysis of those forces within and without China that contributed to or inhibited modernization.

678C. History of China III: The Modern Transformation from the 1911 Revolution to the Present. (Ganschow)
A study of China in the Twentieth Century with the focus on the Republic of China, its disintegration, the rise of Communism, and the changes in and nature of the People's Republic of China.

678P. Modern Japan (Buck)
The impact of the west on traditional Japanese institutions, with major attention to the internal history of Japan from the middle of the 19th century to the present.

680F. North Africa: European Penetration and the Colonial Period. (Heggoy)
Attention centered on diplomatic problems raised by contacts between European powers and North Africa. Colonial settlement and colonial history will be discussed.

680P. Nationalism in North Africa and the Problems of New Power. (Heggoy)
Origins of nationalism in Morocco, Algeria, Tunisia and Libya; problems involved in gaining independence, of setting up new governments, and of independently meeting difficulties that were earlier dealt with by the colonial powers.

682F. History of West Africa. (Foley)
A detailed study of the major themes in West African history from A.D. 1000.

682P. Imperialism in Africa. (Foley)
A study of the European penetration of Africa, the diplomacy of partition, and the African response.

688M. The Middle East in Modern Times. (Sokol)
Political, economic and social developments from 1800 to the present; collapse of the Ottoman empire and old Persia, nationalism and the anti-colonialist revolt, the emergence of Israel, U.S. interests and the growing Soviet presence in the area.

693M. (PHY) Philosophy of History.

811F. Seminar in Early American History. 5–15 hours.
A research seminar devoted to an extensive examination of selected topics in the 17th and 18th centuries.

812T. Seminar in Middle Period U.S. History. 5–15 hours.
A research seminar in United States history of the period 1800–1877.

814A. Seminar in Recent U.S. History. 5–15 hours.
Topics on social, intellectual, cultural, political developments in U.S. history since 1900.

814C. Seminar in U.S. History, 1865–1900. 5–15 hours.
Lectures and student research topics on American history, 1865–1900, with emphasis upon the South and Reconstruction.

815M. Seminar in U.S. Social and Intellectual History. 5–15 hours.
A research seminar devoted to an examination of representative social and intellectual developments of the American colonies and the United States.

815W. Historiography. 5–15 hours.
A seminar on the historical writing, both American and European (depending upon the instructor), with varying topics including the philosophy of history, books, source materials, and historical aids.

816E. Seminar in U.S. Diplomatic History. 5–15 hours.
Topics in the theory and practice of American foreign relation will vary and will cover all or part of the chronological period of 1763 to the present.

816X. (POL) Research Seminar in National Security. 5–15 hours.
Reading and research on theory and practical aspects of selected national security topics such as national security organization, strategic planning and the policy processes, strategic alternatives, alliances in the nuclear age, problems of insurgency.

818N. Seminar in Black History. 5–15 hours.
Lectures, primarily bibliographic, and student research topics on Black history in America with emphasis given to the period since 1865.

831F. Seminar in the Latin American History. 5–15 hours.
Varying research topics in Latin American history, colonial and republican, depending upon the interest of the student and instructor.

837M. Seminar in the Ancient Near East. 5–15 hours.
An intensive study of the competing chronological systems presently in use which create a history of the Near East from earliest times to the Persian conquest.

844T. Seminar in Western Medieval History. 5–15 hours.
Intensive reading, class discussion, and research. Subjects will vary according to the interests of the students and of the instructor; past topics have included comparative history of England and France, intellectual history, and palaeography and diplomatics.

850E. Seminar in the Renaissance. 5–15 hours.
Research topics in the Quattrocento and Cinquecento.

852P. Seminar in Early Modern Europe, 1648–1815. 5–15 hours.
Selected topics in early modern European history, 1648–1815.

853M. Seminar in 19th Century Europe. 5–15 hours.
Research topics in 19th century European history: diplomatic, political, social, economic, and intellectual.

853P. Topics in French Imperial History. 5–15 hours.
Studies of the history of French expansion overseas, particularly in Africa with special emphasis on policy function and on how these were or were not applied in colonies and protectorates. (C. 1830 to c. 1862)

858E. Seminar in 20th Century Europe. 5–15 hours.
Readings and research in 20th century European history. Topics will vary according to the interests of the student and instructor. Past topics have included European diplomacy, the age of World War I, and the Age of World War II, and the Cold War.

893A. Teaching History in Colleges and Universities. 3 hours. (Stephens)
A study of the variety of methods appropriate to instruction in college level survey history courses and practice and utilization of audio visual aids and development of classroom tests.

893G. Historical Methodology.
Required of graduate students majoring in history. This course will include methods of research and various aids, as well as the generally accepted usages in historical composition.

893P. Archival Management.
A seminar in the proper operation and arrangement of archives.

930. Thesis. 5–50 hours.

HOME ECONOMICS

Emily Quinn Pou
(Dawson Hall, South Campus)

Graduate study leading to the Master of Science or Master of Home Economics degree is offered in the various subject matter areas including clothing and textiles, experimental foods, nutrition, family development, child development, and housing and home management, consumer economics and furnishings and interiors. In the child development area, the program may be directed towards study of normal children or towards specialized training concerned with the needs of the trainable mentally retarded group. (Further details of the M.H.E. program may be found on page 32. Facilities include well equipped laboratories in foods, nutrition, clothing, textiles, housing and home management; the Child and Family Development Laboratories for infants and young children; the Athens Unit of the Georgia Retardation Center; and the University Computer Center. Applications for admission and requests for assistantships should be addressed to the dean, School of Home Economics.

CHILD AND FAMILY DEVELOPMENT (CFD)

607. A Survey of Marriage and Family Problems. (Murphy, Walters)
Prerequisite: SOC 105 or PSY 101 and consent of the instructor.
Study of stresses that produce problems in the modern family, e.g. marital and sexual adjustment, divorce, alcoholism, illegitimacy, etc.

608. (PSY) Development of the Young Child. (Brody, Endsley, Spigelmyer, Walker, Walters)
Prerequisite: PSY 101 and CFD 395 or equivalent.
Four lectures and two periods of supervised observation in the child development laboratories. The physical, mental, emotional, and social development of the preschool child, and the origins of psychological processes in laboratory work; special reference to techniques of guidance.

609. Infant Development. (Yang)
Prerequisite: CFD 408 or consent of instructor.
Emotional, social, intellectual, and physical development in infancy. Supervised observation in the Child and Family Development Center and in selected homes.

650. (HFM) Second Half of Life.

661. (SOC) The Family. (Price-Bonham, Walters)
Family study from many different angles, utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

662. Women in Family and Society.
Prerequisite: Five hours in child and family development and sociology or consent of instructor.
Women's roles in the family and society—the range of occupational, volunteer, and other societal roles open to women; changing societal constraints on women's roles; conflicting demands on societal and family roles; strategies for handling conflicts; effects of changes in women's role on men's roles.

690. (CLT/FDN/HFM) Research in Home Economics. (Walters)
Prerequisite: Admission to graduate school.
Introduction to research design in selected areas of home economics. Emphasis on common problems incurred in measurement and data analysis.

692. Individual and Family Development Facilitation. (Bishop, Hobbs, Spigelmyer, Stoneman, Walker)
Prerequisite: CFD (PSY) 395; CFD (ECE) 496 or equivalent.
Developing skills for observing social interaction and selected techniques for facilitating optimal development of individuals and families in social contexts.

695. Contemporary Family Life. (Price-Bonham, Murphy, Spigelmyer, Walters)
Prerequisite: Work in child development, or family relations, SOC 105 or SOC 461.
A study of the changing American family and of interpersonal relationships between family members at each stage in the family life cycle.

696. (ECE) Guidance of Children and Parents. (Bishop, Brody, Hobbs, Osborn, Spigelmyer, Walker, Walters)
Prerquisite: CFD (PSY) 395 or equivalent.
Principles, techniques, and application for teaching parents and teachers in the guidance of growth and development of children and youth. Opportunities for observation and participation in child-child, child-parent child-teacher, and teacher-parent observation.

697. Marriage, Family, and Human Sexuality. (Hobbs, Murphy, Walters)
Prerequisite: Consent of instructor.
A survey of various attitudes, values, substantive, and theoretical materials on human sexuality, particularly the relation of these two and implications for interpersonal relations in marriage and the family.

791. Creative Activites in Nursery School and Kindergarten. (Bishop, Brooke, Kohl, Osborn, Paguio).
Prerequisite: CFD 395 and one additional related senior division course.
Selected types of creative activites for children of the pre-school years, including literature, art, mathematics, science, music, nature study, and other materials for young children. Practical experience with these in child development laboratories.

794. Nursery School and Kindergarten Theories and Administration. (Brooke, Osborn, McPhaul Child and Family Development Center Staff) 5 hours. Four lectures and two periods of supervised practice in the child development laboratories.
Prerequisite: CFD (PSY) 395 and one additional related senior college course.
Instruction and observation in the basic principles of group management of children from two through five years, guidance in selection of equipment and play materials, administration and organization of nursery schools and kindergarten; visitations of pre-primary centers.

795. (EXC) Teaching the Severely Mentally Retarded. (Burton, Stoneman)
Prerequisite: EXC 500, 504, CFD (PSY) 395.
Considers the growth and development of the severely mentally retarded and programs maintained in public schools, institutions, private agencies, and sheltered workshops to prepare them for optimum functioning with emphasis on family life, mobility, employment, literacy, etc., from both the curricular and methodological aspects of education.

807. Principles of Marriage and Family Counseling. (Murphy)
Prerequisite: Consent of instructor and ten completed graduate hours in counseling-related courses.
A study of principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family counseling. The focus will be on normal developmental problems rather than on psychopathology.

850. Current Research and Issues in Child and Family Development. 1 hour. Max. 6 hours. (Endsley, Price-Bonham, Walters)

Prerequisite: Graduate standing in Child and Family Development.
A forum for presenting current research of faculty, graduate students and visiting scholars. Discussion of current issues pertaining to child and family development.

871. (SOC) Comparative Family Systems.
Prerequisite: Consent of the instructor.
An analysis of the family in various cultures through the study of the reciprocal relation of kinship systems and society. (Offered alternate years.)

890. Research in Child and Family Development. 1–20 hours. (Price-Bonham, Endsley, Walters)
Critical evaluation of research process, conceptualization of the research problems, selection of appropriate methods of data collection, construction of research designs, collection of data, consideration of alternative data analysis strategies, interpretation of findings, research writing. (Ten hours maximum credit for a master's degree.)

892. (PSY) Behavior Problems in Children. (Sheerer, Psychology Staff)
Prerequisite: CFD 408.
The child's adjustment to his environment with a consideration of the causes, treatment, and prevention of behavior problems. Utilization of case materials. Research problems in field will be carried out by the students. (Offered spring quarter.)

893. Client Centered Family Counseling. (Sheerer)
Prerequisite: Courses in family life, child development, or psychology.
A study of major areas of adjustment in marriage and family relationships, problems of adjustment, and philosophy and techniques for family counseling.

894. Seminar in Child Development. (Endsley, Hobbs, Walters)
Prerequisite: Consent of instructor.
Survey of current literature on selected areas in child development; discussion of current trends in the field; reports and discussion on selected topics; use of resource materials in the field.

895. (SOC) Seminar in Family Development. (Hobbs)
Prerequisite: Consent of the instructor.
Survey of current literature on selected areas in family development; discussion of current research trends in the field; reports and discussion on selected topics; completion of review of empirical research paper.

896AB. Foundations of Child and Family Development. 5 hours each. (Endsley, Price-Bonham, Walters)
Major substantive areas of research and other literature in child and family development will be studied. Emphasis will be placed on studies of interaction between or among family members and their impact on each other.

897. Theories of Human Development. (Endsley, Walters)
Prerequisite: CFD (PSY) 408 or equivalent.
An investigation of the origin and extension of selected theories of human behavioral, social and emotional development, particularly as these relate to development within a family context. (Offered winter quarter.)

899. Family Theory Construction.
Prerequisite: CFD 890 or SOC 831 or consent of instructor.
Experience in developing theory through codification of family phenomena. The use of theory in the family area and experience in developing theory concerning family phenomena.

901. Independent Study in Family and Child Development. 1–20 hours.
Prerequisite: Consent of instructor.
Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

907. Practicum in Marriage and Family Counseling. 1–20 hours. (Murphy)
Prerequisite: CFD 807 and 893.
Supervised experience in various aspects of marriage and family counseling.

921. Problems in Home Economics.

930. Thesis Research. 5–50 hours.

998–999. Internship in Nursery School and Kindergarten Administration. 5 hours each. (Brooke, Child and Family Development Center Staff)
Instruction, observation and directed experience in various phases of nursery school administration, including program, parent relations, physical plant, equipment, supplies, and finance.

CLOTHING AND TEXTILES (CLT)

663. Historic Costume. (Willett)
Prerequisite: CLT 321 or consent of instructor.
A study of historic costumes from ancient times to the present, socioeconomic, political and religious influences on dress. (Offered fall quarter.)

672. European Study Tour in Clothing and Textiles. (Walker)
Prerequisite: CLT 463 or consent of instructor.
A study on location of fashion merchandising, costume and textiles in various foreign cities of specific interest.

690. (CFD, FDN, HFM) Research in Home Economics. (Walters)

761. Clothing and Textile Economics.
Prerequisite: CLT 321; MKT 360; or by consent of the instructor.
Organization and functions of clothing and textile industries. Factors related to production, distribution and consumption of apparel and household textiles; special problems; field trips. (Offered winter quarter.)

762. Tailoring. 5 hours. Four double periods. (Harvey, Walker)
Prerequisite: CLT 321.
Planning and making a tailored ensemble; techniques employed in custom made garments. (Offered winter and summer quarters.)

763. Illustrative Materials in Clothing and Textiles. 5 hours. Four double periods. (Harvey, Walker)
Prerequisite: CLT 321 or equivalent and one other approved senior division course in clothing and textiles.
Preparation of illustrative materials on problems related to selection, construction, and care of clothing and textiles. Designed for teachers, county extension agents and other specialized groups. (Offered summer quarter)

764. Pattern Design and Draping. 5 hours. Four double periods.
Prerequisite: CLT 321.
Making and using a master pattern in designing and constructing garments; emphasis on artistic effects in color, line and texture. (Offered spring quarter)

765. Techniques in Construction on Current Fabrics. 5 hours. Four double periods. (Harvey)
Prerequisite: CLT 321.
Planning, constructing, and evaluating garments and techniques using knits and speciality fabrics, such as suede, furs, and vinyls. Designed for majors in Clothing and Textiles, Home Economics Education, and county extension agents.

865. Clothing and Textile Problems. 5 hours. Two lectures, laboratories arranged.
Prerequisite: CLT 321 and one other approved senior division course.
New developments in textile products; new techniques in clothing construction; trends in clothing selection. Individual problems based on students' professional needs.

867. Clothing and Textile Research Methods. 5 hours. One conference and four library or laboratory periods arranged.
Prerequisite: Two approved graduate courses in clothing and textiles.
The philosophy of research applicable to clothing and textile studies; methodology and interpretation of research liberature.

901. Independent Study in Clothing and Textiles. 1–20 hours.
Prerequisite: Consent of instructor.
Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

921. Problems in Home Economics.

930. Thesis Research. 5–50 hours.

FOODS AND NUTRITION (FDN)

619. (FS) Nutritional Aspects of Food Science.

626. (FS) Sensory Principles and Practices.

641. Advanced Nutrition I. (Caster)
Prerequisite: FDN 351; VPH 310; BCH 310.
Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the major nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

642. Advanced Nutrition II. (Caster)
Prerequisite: FDN 441 or 641.
Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the vitamins and inorganic nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

650. Introduction to Experimental Foods. 5 hours. Two lectures and two 3-hour laboratory periods. (Greene)
Prerequisite: CHM 261 or equivalent.
Study of physical and chemical properties and changes in foods that influence quality of foods and food products. Experimental methods used in preparation of confections, gels, fruits and vegetables, baked products and meats.

651. Evaluation of Foods and Food Products. 5 hours. Four lecture periods and two hours laboratory and field work. (Greene)
Prerequisite: FDN 306 or 350 and 351.

A study of food products currently used for human consumption in the home and in quantity food service; criteria for evaluating new food items and the effects of new processes on edible quality and nutritive value.

653. Nutrition and Disease. 5 hours. Four lectures and one 2-hour laboratory period. (Wang)
Prerequisite: FDN 641.
Modifications needed in normal diet in treatment of various diseases. Special emphasis is given to the study of digestive disease, metabolic disorders, diseases of the blood and to cardiovascular and renal disorders.

654. Experimental Foods. (Greene)
Prerequisite: CHM 261 or equivalent.
Introduction to experimental design, library research and objective and subjective methods for evaluating food quality. Influence of physical and chemical characteristics of meats, batter, doughs, and fats on the quality of prepared products.

655. Maternal and Child Nutrition. 5 hours. Four lectures and one 2-hour laboratory period.
Prerequisite: FDN 642.
Fundamental principles of nutrition during pregnancy, lactation, infancy and early childhood. Laboratory work in maternity clinics, infant laboratory, nursery schools, and other appropriate community agencies.

658. Readings in Nutrition.
Prerequisite: FDN 351 or equivalent.
Recent developments and the present status of knowledge on selected topics from the field of nutrition.

690. (CFD, CLT, HFM) Research in Home Economics. (Walters)

700. Nutrition Related to the Human Life Cycle.
A survey of nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to the nutritional needs during pregnancy, infancy, and early childhood, and the gerontological-nutritional needs. The subject matter of the course will be presented for non-majors in Foods and Nutrition.

760. (EHE) Special Problems in Nutrition Education.

772. Advanced Institution Management Practice. 5 hours. One-hour conference and four 2-hour laboratory periods.
Prerequisite: FDN 372, 354, and 574 or consent of instructor.
Principles of management and analysis of practices observed in management and operation of institutional food services.

774. Institution Food Purchasing.
Prerequisite: FDN 210.
A study of storage, net yields, specifications, grading, cost control and distribution of food and food products.

803. Advanced Food Theory and Applications. (Greene)
Prerequisite: BCH 601, 602, or 801, 802 or BCH 310, FDN 450/650 and FDN 454/654 or equivalent.
A study of the behavior of food components as it affects the characteristics of food. Involves background lectures and critical evaluation of the current basic and applied research literature in the food field.

850. Seminar in Foods and Nutrition. 1–12 hours.
Prerequisite: One advanced course in the subject area.
Survey of current literature on selected topics in food and nutrition. Organized to use classic studies as background material for each topics.

854. Special Topics in Foods and Nutrition.
Prerequisite: One advanced course in the subject area.
Individual investigation of problems related to foods and nutrition. Designed to develop initiative in the student seeking information in a field of special interest.

857. Introduction to Research Methodology.
Prerequisite: Graduate standing in Foods and Nutrition or consent of instructor.
A systematic laboratory experience designed to provide the student first hand acquaintance with a wide variety of laboratory methods important in foods and nutrition research (involving humans and/or laboratory animal nutrition, and important in quantitative studies involving human food preparation and evaluations.

858A-E. Research in Foods and Nutrition. 5 hours each. (Caster, Greene, and Peifer)
Prerequisite: FDN 857 or equivalent.
The planning and conducting of an individual research problem under supervision.

859. The Nutritional-Metabolic Parameters of Geronotology. (Peifer)
Prerequisite: FDN 642 or equivalent and BCH 601, 602 or equivalent.
A study of the nutritional-metabolic interrelationships affecting the onset and progress of "agedness" in human population groups. The course will include a review of the current experimental approaches, a detailed literature survey and student reports on specific aspects of nutrition related to geronotology.

901. Independent Study in Foods and Nutrition. 1–20 hours.
Prerequisite: Consent of instructor.
Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

921. Problems in Home Economics.

930. Thesis Research. 5–50 hours.

HOUSING, FURNISHINGS, AND HOME MANAGEMENT (HFM)

650. (CFD) Second Half of Life.
Prerequisite: Graduate standing plus 10 hours of sociology, psychology and/or child and family development.
A review of the second half of life: resource management, living patterns and housing, sexuality, roles, family relationships, community and organization involvement, career opportunities.

661. Aged as Consumers.
Prerequisite: HFM 364 or consent of instructor.
The course will be concerned with the economic status, patterns, vulnerability, management practices of older persons, and with major consumer legislative acts.

664. Family Social and Economic Systems.
Prerequisite: ECN 105 or 106 and SOC 105 or one senior division course in related field.
Systems analysis of research on the family as an income producing and income utilizing unit; implications on family structural characteristics on the family as supplier and demander of inputs and outputs in relation to economics systems, and feed back consequences for families.

665. Family Consumer Systems.
Prerequisite: ECN 105 and SOC 105 or one senior division course in related field.
Social systems analysis of research on consumer activities of households, families, and individuals; examination of empirical research and theory on the consumer at micro and macro levels; suggested new directions for consumer research and theory with family focus.

671AB. Guides United States Study Tours in Housing and Furnishings. 5 hours each.
Prerequisite: Two 400 level courses in housing or furnishings or consent of instructor.
A systematic study of residential architecture, interiors, and furnishings as found in restored and reconstructed areas of the United States. A maximum of 10 quarter hours credit earned in tour experience may be applied to any one degree. (Offered summer quarter.)

672AB. Foreign Study Tour in Housing and Furnishings. 5 hours each. (Clendening)
Prerequisite: HFM 475 or equivalent, or consent of instructor.
An on-site study of historical and contemporary residential architecture and interiors and appropriate manufacturing and design centers in selected areas outside the United States. A maximum of 10 quarter hours credit earned in tour experiences may be applied to any one degree. (Offered summer quarter.)

675. Historic Homes and Furnishings. 5 hours. Three lectures and two double laboratory periods.
Prerequisite: HFM 375 and two upper division courses or consent of instructor.
A study of decoration and furnishings with an application to contemporary interiors.

676. Decorative Accessories for the Home.
Prerequisite: HFM 475/675 or consent of the instructor.
Historical and cultural development of accessories used in the home including ceramics, metals, and textiles. Design and characteristics of materials in these accessories will be covered.

677. Contemporary Home Furnishings.
Prerequisite: Two senior division courses in housing, home furnishings, or interior design, or consent of instructor.
Contemporary developments in furniture and accessories for the home; designs and materials used in contemporary homes.

678. Fabrics for Furnishings and Interiors.
Prequisite: HFM 475 or 477 and CLT 360 or consent of instructor.
Development of design, construction, fibers and finishes for fabrics with emphasis on quality and utilization of current materials in home furnishings.

680. Housing Developments.
Prerequisite: HFM 386 and 5 hours each of sociology and economics or consent of instructor.
Development of modern housing as related to family welfare, to health, safety, delinquency, and social progress. A survey of housing problems; development of legislation; policies and programs; social and economic trends.

681. Housing for the Aged.
Prerequisite: Graduate standing, 10 hours of housing courses.
Housing needs and conditions, housing alternatives, legislation and current programs related to housing aged persons. Survey of current hous-

ing compared to proposals for effectively meeting more of the housing needs of the aged person.

687. Housing Design Principles.
Prerequisite: HFM 375 and 386.
A course in the principles of house design and construction including drafting, residential construction and design, and professional relationships with architects and interior designers.

690. (CFD, CLT, FDN) Research in Home Economics. (Walters)

700. Consumer Legislation.
Prerequisite: Two upper division courses in related areas.
The rights and responsibilities of consumers related to legislation concerning consumer information, product safety, choice of goods and channels of appeal for the consumer.

746. Household Equipment Testing.
Prerequisite: HFM 343, PCS 127.
The operation, care and installation requirements of equipment; the measurement and testing of factors governing the efficiency of different types of equipment. (Offered spring quarter.)

747. Residential Lighting.
Prerequisite: HFM 210 or 375 or consent of instructor.
Residential application of lighting. Lighting principles and procedures and their application to various residential situations. New developments in lighting fixtures and lighting design.

764. Family Financial Counseling.
Prerequisite: HFM 364.
Case study and practicum experiences related to financial counseling for families.

768. Management for Disadvantaged Families.
Prerequisite: HFM 368 or HFM 867 and approval of instructor.
Study of the life styles and instrumental functioning of families handicapped by limited cultural, mental, economic and physical resources. Unique managerial needs of disadvantaged families will be explored.

770. Consumer and the Market.
Prerequisite: ECN 105.
Problems of the household buyer; intelligent selection of goods on modern market; standards and labeling as safeguards in buying; family income and problems in distribution.

771. Furnishings and Interiors for Low Income Housing. 5 hours. Two 1-hour and three 2-hour laboratory periods.
Prerequisite: HFM 364, 377, or one 400 or 500 level furnishings course, and 10 hours of social sciences, or consent of instructor.
Planning furnishings for various levels of family income with emphasis on low income families. Study of available space in floor plans and the selection of materials, construction, design, durability and cost of furnishings for the available space using limited economics resources.

772. Furnishings Manufacturing and Retailing Industries.
Prerequisite: One 400 level course in Furnishings and Interiors (not fabrics)
The design, construction and cost of current furnishings related to manufacturing and retailing processes. Field trips to representative manufacturing plants, retail stores and merchandising marts.

775. Methods and Techniques of Furnishings and Interior Display. 5 hours. Two one-hour lectures and three two-hour laboratory periods.
Prerequisite: HFM 475, 477, or consent of instructor.
Planning, executing, and evaluating illustrative materials and techniques in furnishings for promotional or informational purposes. Individual and group work on two and three dimensional displays.

776. Family Finance.
Prerequisite: Consent of instructor.
Personal and family financial planning. Family values in relation to family income, spending, saving, and investing; effort of the economy on family financial planning; retirement plans and social security; insurace; home ownership and housing.

777. Problems in Practical Home Furnishings.
Prerequisite: 20 hours of graduate credit and consent of instructor.
Problems in practical home furnishings for advanced students. Independent study and emphasis on research is employed for solutions to design problems and explorations and experimentations in techniques in refinishing furniture, window treatment construction and upholstering, and refurbishing the home.

810. Research in Family Housing and Management.
Prerequisite: At least two senior division courses in housing, furnishings, management, consumer economics or related fields.
Investigation of data as obtained from literary review or research with discussions of solutions for practical problems in housing, management or consumer economics.

860. Readings in Family Economics.
Prerequisite: HFM 364 or consent of the instructor.
Survey of current and classical research in family financial management; examination of nature

of family financial problems under changing economic conditions; selected topics of special interest.

861. Readings in Home Management.
Critical review of research and other literature concerned with issues and concepts in home management.

866. Survey of Home Management Concepts.
Prerequisite: HFM 368, 369 or equivalents.
Survey of basic concepts and theoretical framework for home management courses; summary of historical trends and needs for future research in home management.

867. Management Problems in Homes.
Prerequisite: HFM 364 and 368.
The processes of decision-making in families for realization of values and goals through the effective use of human and material resources. Supervised observation in selected homes.

869. Survey of Home Management Programs.
Prerequisite: HFM 368, 369 or equivalents.
Comprehensive survey and evaluation of educational experiences in current home management programs, and identifications of present needs in the field.

901. Independent Study in Housing, Furnishings, and Home Mangement. 1–20 hours.
Prerequisite: Consent of instructor.
Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirement.)

921. Problems in Home Economics.

930. Thesis Research. 5–50 hours.

HORTICULTURE (HOR)

J. Benton Jones, Jr.
(Plant Sciences Building, South Campus)

Doctoral language requirement for plant science; one language with a level of competency as outlined under general requirements for a Ph.D.

The department offers graduate work leading to the Master of Science degree in horticulture and the Ph.D. degree in plant science with majors in fruit crops, vegetable crops, ornamentals, and floriculture. A major in either program may include work related to plant genetics and breeding or crop culture and management. In the minor, or related fields, students are encouraged to enroll in botany, soil science, chemistry, biochemistry, plant pathology, statistics, or other courses directly or indirectly related to the program. The interests of the students are paramount in outlining the course of study.

Graduate work in this department is designed to develop a high order of independent thought, broad knowledge, and technical skills. The emphasis in graduate work is placed on research, supplemented by courses and seminars.

Programs for both the M.S. and Ph.D. degrees are planned on an individual basis by the student and his major professor. Admission status, credit requirements, transfer credits accepted, academic standards, residence requirements, and time limit conform to regulations as given by the Graduate School and the College of Agriculture.

Five quarters are generally adequate for a full time student to complete the requirements for the M.S. degree. The time necessary for completing the Ph.D. requirements varies with the student's academic background, interest, and initiative.

602. Advanced Pomology. (Couvillon)
Prerequisite: HOR 301 and BOT 380.
The physiological principles underlying the production of fruit and nut crops and small fruits with review of experimental evidence. Emphasis placed on varietal selections, site selection, and current cultural practices.

604. Advanced Olericulture. (Mills)
Prerequisite: HOR 303 and BOT 323.
Principles underlying commercial vegetable

production with review of experimental evidence. Emphasis placed on the ecology, nutrition, varietal development and selection, herbicides and other current cultural treatments.

605. Greenhouse Management I. (Natarella)
Prerequisite: HOR 310 and 315 or 325 or BOT 380.
A study of the principles and practices involved in the production of greenhouse pot plants, bedding plants and a few selected cut flowers. Special emphasis is given to nutrient practices, the effects of growth regulators and post-harvest handling and storage practices of floricultural crops.

606. Greenhouse Management II. ((Natarella)
Prerequisite: HOR 605.
A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and the use of growth regulators. Students will be personally responsible for the culture of a floriculture crop in the greenhouse.

607–608. Special Problems in Horticulture. 5 hours each.
Prerequisite: 10 hours senior courses in horticulture.
This course is designed for the graduate student who wishes to carry out a research or technical problem of special interest under direction of a staff member.

611. Plant Nutrition. (Mills)
Prerequisite: BOT 323 and 380.
Principles and perspectives of plant nutrition. Emphasis is placed on the "initial" or "acquisitive" aspects of plant nutrition. This course deals in the main with the mineral nutrition of higher green plants. The course allows the student to deal with problems encountered by plants as they mine the environment through a sound knowledge of the science of plant nutrition.

613AB. (AGY/ENT/PAT) Internship in Crop Protection and Pest Management. 1 hour each.
Prerequisite: Must be enrolled in professional Master's Plant Protection and Pest Management degree program.

621. Post Harvest Physiology of Horticulture Crops. (Vines)
Prerequisite: Two senior college courses in fruits or vegetables.
A study of the physiology of maturation and the effects of temperature, light, bruising, and other factors on ripening. Also the relation of the above to various operations and equipment used in harvesting, handling, preparation for market and storage of fruits and vegetables.

630. Plant Protection Laboratory. 2 hours. (Couvillon)
Prerequisite: PAT 353 and ENT 374.
The application of pesticides for the control of insects, diseases, weeds, and other crop pests. Special attention is given to application equipment and principles.

703. Advanced General Horticulture.
Prerequisite: 10 hours of plant science.
A study of the principles of plant growth as applied to the production of horticultural crops. The control of the vegetable-reproductive balance, the use of chemical growth regulators, manipulation of the photo-period to control flowering, the water and nutritional requirements of horticultural crop plants, and the production of varieties fitted to particular uses and environments are among the subjects studied. Available only to candidates for the Master of Agricultural Extension and Master of Education degrees.

800. Horticultural Seminar. 1 hour.
Required of all graduate students in horticulture. Open to all students in related fields. Attendance without registering for credit is permitted. Papers on selected topics to be presented by advanced students, faculty members and guest speakers.

801. Horticultural Crop Improvement. (Natarella)
Prerequisite: GEN 358, 401 or equivalent.
A study of the application of the principles of genetics and plant breeding to the modification and improvement of horticultural plants. The maintenance of improved strains and seed production are also considered.

808. Horticulture Research.
Prerequisite: Graduate standing.
This course is designed for graduate students who wish to carry out advanced research not covered in their thesis topic under the supervision of a staff member.

813. Production Practices of Horticultural Crops. (Mills)
Prerequisite: BOT 380.
A study of the principles of plant nutrition with emphasis on the theories of ion absorption, function of nutrient ions and nutrient effects on plant composition.

820. Instrumental Methods of Plant Analysis. (Vines)
Prerequisite: BOT 380.
This course will stress the principles and actual operation of laboratory equipment used for plant and soil analysis. The analysis of inorganic elements by atomic absorption spectropho-

tometry and organic compounds by paper and thin layer chromatography, and ion exchange resins will be covered. Radioisotope tracer technique, metabolic measurements by respirometry, and micrometeorological measurements will also be emphasized.

930. Thesis. 5–50 hours.

JOURNALISM AND MASS COMMUNICATION (JRL)

Scott M. Cutlip
(Journalism Building, North Campus)

The Master of Arts degree in journalism includes study in news editorial, advertising-public relations, or radio-TV-film; at least 10 quarter hours of study in the humanities and/or social sciences; and a thesis—a total of 45 quarter hours.

Anyone holding a bachelor's degree from an accredited college or university is eligible to be considered for admission to the graduate program of the School of Journalism and Mass Communication. Undergraduate work in journalism is not required, although students without such background will—if admitted—be required to take a minimum of three courses on the undergraduate level.

Prospective students who are interested in financial aid should file an application with the Graduate School or School of Journalism and Mass Communication.

601. Foundations of Program Ideas.
Prerequisite: JRL 302.
The processes by which entertainment and informational communication have developed in telecommunications systems. Viewing and listening of early programs, study of stage, cinema and folk lore productions of the past as well as principal theories of program function will be studied.

602. Telecommunication Production Variables.
Prerequisite: JRL 301 and 302.
The roll of motion, composition, thematic variation, synthesis, plot and character in communicating meaning in telecommunication programs. Students will view and analyze typical works and will participate in laboratory and field studies.

603. Public Telecommunication Utilization.
Prerequisite: JRL 303.
Procedures in evaluating public telecommunication programming including its relationship with the users of public telecommunications.

Course will involve social and behavioral scientific findings as to the effectiveness of media in a variety of educational and instructional settings.

604. Educational Telecommunication Program Development.
Prerequisite: JRL 303.
The practice and philosophy of developing educational programming for in-school, adult education and enrichment aims within publicly supported stations and networks.

605. Operations Management in Telecommunications.
Prerequisite: JRL 303.
Theory and application of management routines in the administration of telecommunications business. Cost and revenue management, use of research, rate setting, capital and operations budgeting, personnel management and program syndication.

630. History of the Mass Media in the United States.
Prerequisite: JRL 203.
A survey of the mass media in the United States from the colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

640. Public Opinion Reporting.
Prerequisite: JRL 260 and 351 or permission of instructor.
An examination of public opinion, its nature and study techniques, propaganda; and media intraction with society, with emphasis upon the measurement in public opinion and interpretation of data. Students will prepare reports of findings for dissemination in print and broadcast media.

654. Law of Communications.
A broad application of principles of law to the mass communication media, media practice, advertising, and freedom of information, including libel, contempt of court, right of privacy, copyright, postal laws.

656. Contemporary American Magazines.
Prerequisite: JRL 101, 203, and 204, or permission of instructor.
A survey of contemporary American magazines and their role in society. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology.

660. Public Affairs Reporting.
Prerequisite: JRL 260 and 351.
An advanced course in analyzing, interpreting and reporting governmental affairs at local, state, and national levels. Students cover assignments for student and professional media.

661. Advanced Radio-Television News.
Prerequisite: JRL 381.
Advanced methodology in gathering and producing news for radio-television. Students will use sound film cameras and audio recording equipment. Analysis of news sources and problem areas unique to the broadcast journalist is emphasized.

711. Writing for Telecommunication.
Prerequisite: JRL 303.
A course in conceptualizing the effects of scripts with the aim of introducing the student to message scripting in telecommunications (radio, television, recordings, film and cable). Emphasis will be upon working from perceptual skills to scripting.

712. Basic Telecommunication Production.
Prerequisite: JRL 303. Available to sequence majors only.
The theory and practice of studio operations in radio, television, and film, Laboratory experience with control boards, cameras, switching and editing equipment, lighting, microphones and related equipment. Problems of production, design, direction, and performance included.

713. Telecommunication Regulation.
Prerequisite: JRL 303.
A survey of regulatory agencies concerned with telecommunication (radio, television, cable), important regulatory principles from law, regulatory practice and common law. Emphasis will be upon the regulatory issues faced by the professional in telecommunication, including the development and use of self-regulatory codes.

720. (SPC) Communication Theory.

721. Social Effects of Mass Communication.
Prerequisite: JRL 101 and 203 or two senior level courses in psychology, sociology, or speech communication.
The interaction between mass communication and the social institutions of our society, its effects, uses and potential—will be critiqued and analyzed, specifically delving into mass media's effect on children, attitudes and values, minority groups, and social behavior. Current research literature in the field will be analyzed and methods of improving the system will be discussed.

722. (SPC) Mass Communication and Persuasion.
Prerequisite: JRL 101 and 203 or two senior level courses in psychology, sociology, or speech communication.
An examination of approaches utilized to investigate mass communication as a persuasive pro-

cess. The history of theoretical and empirical development in this area as well as recent developments are studied with particular focus on attitude change through communication; the nature of communication in relation to institutionalized communications media; and the effects of persuasive communications on attitudes and opinions.

723. Mass Communications Research.
Prerequisite: One course in statistics.
Introduction to experimental and survey design for research in the field of mass communications. A survey of methodology in conjunction with mass communications research case studies, problems, and class research projects.

743. Production of Informational Programming.
Prerequisite: JRL 511, 512.
A study of the theory and practice of TV directing applicable to both commercial and educational television. Includes the principles and techniques of camera shots, audio and video switching, and creative interpretation. Each student directs exercises utilizing professionally equipped color television studios.

744. Television Acting and Performing.
Prerequisite: Two senior division courses in speech communication, drama, or radio-television.
The theory and practice of television acting with primary emphasis on dramatic material as it relates to professional television.

745. Advanced Television Directing.
Prerequisite: JRL 543 or permission of the instructor.
An advanced study of television directing with special emphasis on dramatic material, video tape editing, and color special effects.

746. Advanced Projects in Radio-Television-Film.
Prerequisite: JRL 543 or permission of instructor.
An independent projects course in radio, television, and film media. Students may do projects in one or more media.

753. Editorials and Issues.
Prerequisite: JRL 260 and 351.
A study of editorial policies, ethics, influence, and techniques. Students analyze, discuss, and write editorials about local, state, and national issues.

758. Magazine Article Writing.
Prerequisite: JRL 260 and 351 or permission of instructor.
A practical course in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

759. Critical Writing and Reviewing.
Prerequisite: JRL 260 and 351.
A course in criticizing and reviewing books, plays, television, films, and other arts for newspapers, magazines, and related media.

760. Investigative Reporting.
Prequisite: JRL 460 or equivalent and senior standing. Practice in and study of investigative, interpretative, and in-depth reporting for the mass media. Students will develop reporting projects in the field of public affairs in keeping with their interests and background.

764. Newspaper Management.
Prerequisite: JRL 101.
A study of business and editorial management of daily and weekly newspapers, including circulation, advertising, and promotion.

766. Journalism in the Secondary School.
A survey of news gathering, news writing, copy reading, typography, and business management, with specific relation to the high school newspaper. Also school public relations.

767. Contemporary American Newspapers.
Prerequisite: JRL 101, 203, and 204, or permission of instructor.
A study of the newspaper and its role in America today. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology. Leading papers in various sections are examined closely.

770. Advanced Projects in Magazines.
Prerequisite: JRL 558 or 758.
An independent projects course in magazines. Most projects are concerned with the writing of magazine articles, particularly series of articles. Students may select projects related to other phases of magazine production.

774. Advertising Campaigns.
Prerequisite: JRL 557, 575, and 576.
Planning, preparing, and presenting research, copy, and layout for a national advertising campaign. Class groups function as an advertising agency. Emphasis on media, copy, and marketing research.

775. Advertising Copywriting.
Prerequisite: JRL 557 or MKT 360.
Principles and practice in the preparation of copy for a variety of media. Reader surveys, copy tests, and a study of products in relationships to copy and markets are a part of this course.

776. Advertising Media.
Prerequisite: JRL 557.
A study and evaluation of the principal advertising media, including newspapers, magazines, trade publications, radio, television, outdoor,

novelty, and cinema. The work of an advertising agency or office and the selling of space and time are considered.

777. Public Relations.
A study of principles and techniques. Research in interpersonal and mass communications with emphasis on effectiveness studies among various publics.

778. Retail Advertising.
Prerequisite: JRL 557 or 575.
Preparation of advertising for various types of retail advertisers and for the various media used by the retailer.

779. Advanced Advertising Copy.
Prerequisite: Grade of B or better in JRL 575 and permission of instructor.
A continuation of Journalism 775 with greater emphasis on creative writing and designing of advertising for national media. Each student will write his own rationales and prepare copy platforms.

783. Aural Elements in Telecommunication Production.
Prerequisite: JRL 512.
Theory and application of sound recording in message preparation. Acoustics, microphone selection and placement, editing and mixing in both studio and field settings will be subjects of discussion and laboratory sessions.

784. Radio-Television Advertising.
Prerequisite: JRL 115 or 575 or permission of instructor.
An intensive study of the role of advertising in broadcasting. Copy preparation and studio production of both radio and television commercials. Examination of commercials to illustrate basic concepts and techniques.

786. Cinematographic Techniques.
Prerequisite: JRL 511, 512, 280.
Production for telecommunications using film and other portable production equipment. Students will participate in laboratory and field work.

790. Business and Industrial Publications.
Prerequisite: JRL 352 or permission of instructor.
Study of the purpose, content, appearance, writing, and editing of various types of company, business, and association publications, including internal and external house publications.

791. Public Relations Administration.
Prerequisite: JRL 577.
A study of the operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision-making and policy formulation to the communication process.

792. Public Relations Communications.
Prerequisite: JRL 260, 352, and 577.
Use of audio, visual, and written tools and techniques with emphasis on public relations writing and editing. Attention is given to objectives, content, style, graphic presentation, and effectiveness in information dissemination to internal and external publics. Consideration is given to selection and utilization of communications media with emphasis on interpretation of the business, industrial, institutional, and associational story.

795. Public Relations Campaigns.
Prerequisite: JRL 577 and two of the following: JRL 410, 591, 592.
Research, planning, and preparation of an integrated public relations campaign. Campaigns will alternate among business, governmental, institutional, and organizational problems.

796. Advanced Cinematographic Techniques.
Prerequisite: JRL 786.
Advanced theory and application of techniques of studio and second unit production of complicated entertainment and informational programming. Students will produce messages using advanced cinematographic techniques.

798. Industrial Advertising.
Prerequisite: JRL 557 or permission of instructor.
A study of the role, responsibilities, principles, and techniques of business and industrial advertising.

800. Proseminar in Mass Communication.
Survey of research and methodology in major areas of mass communication.

807. Seminar: Mass Media.
Examination and discussion of problems of mass media, their rights and responsibilities, control and support, and their role as social institutions. A special project, determined by the student's interest will be required.

808. Communications Seminar: Propaganda Analysis.
An analysis of propaganda in its cultural, social, and economic settings. A study of propaganda content and techniques and their relationships to opinion formation and change. Course consists of assigned readings, lectures, and research projects.

809. Seminar: Mass Communications in Contemporary Society.
A social, cultural, and economic analysis of the processes and effects of mass communications in contemporary society.

810. Seminar in Communications Research.
Historical and quantitative methods for research in communication with an introduction to experimental and survey design, and statistical analysis.

811. Comparative International Communications Systems.
Study of patterns of mass communications throughout the world; philosophies behind them; social, political and economic reasons that a given kind of pattern develops where it does; comparative analysis of operating procedures of various media, with emphasis on newspaper and broadcast media.

812. Seminar: Mass Communication History.
Prerequisite: Graduate standing and course in media history or permission of instructor.
Historical research method as applied to mass media. Examination of resources, emphasizing state and local holdings. Critical study of selected writing in media history. Development of student research projects.

813. Seminar: Mass Communication Law.
Prerequisite: Graduate standing and course in communication law or permission of instructor.
Communication law problems, issues, and research methods. Selected publications in the field will be examined and criticized. Student research projects will be discussed, developed and criticized.

814A-D. Seminar: Problems in Mass Communication.
Prerequisite: 10 hours or more graduate credit, problems, issues and research in selected topic areas.
A. Radio-Television-Film
B. News-Editorial
C. Advertising
D. Public Relations

830. Research and Readings in Mass Communication. 2–5 hours.
Prerequisite: 10 hours or more graduate credit and consent of instructor.
Directed reading and research in selected areas of mass communication. May be repeated, but not more than cumulative total of five hours permitted.

930. Thesis. 5–50 hours.

LINGUISTICS (LIN)

John Algeo
(Park Hall, North Campus)

The curriculum in linguistics offers the M.A. degree and courses that support doctoral work in other majors by an interdepartmental program involving the cooperation of the Departments of Anthropology, Classics, English, Germanic and Slavic Languages, Philosophy, Psychology, Romance Languages, Speech Communication, Educational Psychology, Language Education, and Reading Education. Concentrations are available in anthropological linguistics, English linguistics, Germanic linguistics, pedagogical linguistics, psycholinguistics, and Romance linguistics.

Prospective students who are interested in financial aid should file an application with the Graduate School.

600. (ENG) Old English.

601. (JAP) Japanese I.

602. (JAP) Japanese II.

603. (JAP) Japanese III.

604. (JAP) Japanese IV.

610. (CLC) Comparative Grammar of Greek and Latin.

611. (ENG) Transformational Syntax.

613E. (ENG) History of the English Language.

614. (PHY) Introduction to Philosophy of Language.

616. Dialectology.
The phenomena of regional and social linguistic variation among speakers of the same language are investigated, with reference to dialect studies of various aspects of several different languages.

619. History of Linguistics.
The development of linguistic thought from the Hellenic period to the twentieth century.

621. Introduction to Indo-European Studies.
The history and development of the Indo-European language family: the various early Indo-European dialects, their grammatical

structures, and the evolution of those structures from the proto language.

623. (ENG) Middle English.

630. Generative Phonology.
The synchronic study of phonology in relation to syntax and the lexicon.

638. (GER) Contrastive Grammar: German-English.

644. (PHY) Symbolic Logic.

646. (GER) Linguistic Structure of German.

648. (ENG) English Grammar: Phonology and Morphology.

661. (SKT) Structure of Sanskrit I.

662. (SKT) Structure of Sanskrit II.

663. (SKT) Structure of Sanskrit III.

669. Historical Linguistics.
Traditional methods of historical linguistics are reviewed with examples from several different language families. Various kinds of possible phonological and syntactic change are investigated in relation to modern linguistic theory.

676. The Structure of Black English.
History and structure of black English: theories of its origins; comparison with other dialects of American English; identity of its speakers.

680. (ANT) Introduction to Linguistics.

681. (ANT) Linguistics: Phonology.

682. (ANT) Linguistics: Morphology.

683. (ANT) Types of Linguistics Structure.

685. (ANT) American Indian Languages.

688. (ANT) Linguistics: Field Methods.

689. (ANT) Linguistics: Advanced Field Methods.

700. (EEN) Language Acquisition and Development.

707. (EEN) English Language Studies for Teachers.

728. (SP) Spanish Phonetics.

757. (FR) French Phonetics.

810ABC. (ENG) Seminar in Historical English Linguistics.

811. Seminar in Syntactic Theory.
Comparison of current theories of syntax; research in selected syntactic problems.

812. (EPY) Seminar on the Psychology of Language: Syntax.

813. (EPY) Seminar on the Psychology of Language: Semantics.

814. (EPY) Seminar on the Psychology of Language: Phonology.

830. (GER) History of the German Language.

832. (GER) Gothic.

833. (GER) Old High German.

840. (GER) Middle High German.

848ABC. Seminar in Linguistics. 5 hours each.

850G. (GER) Seminar.

855. (SPC) Nature of Oral Language.

870F, 871F. (FR) Introduction to Old French. 5 hours each.

870S, 871S. (SP) Introduction to Old Spanish. 5 hours each.

878. (PRO) Provencal Language.

880. (ROM) Romance Palaeography.

881. (PSY) Language and Reality.

882. (PSY) Psycholinguistics.

886. (PSY) Cognitive Development.

888ABC. (ANT) Seminar in Linguistics. 5 hours each.

889ABC. (PSY) Seminar in Developmental Processes. 5 hours each.

890. (ROM) Romance Linguistics.

900ABCD. Directed Readings in Linguistics. 3 hours each.
An advanced course designed to allow the student to investigate various linguistics topics.

901. (ERD) Linguistics and Reading.

930. Thesis. 5–50 hours.

JAPANESE (JAP)

601. (LIN) Japanese I.
Basic Japanese, with emphasis on pronunciation and mastery of simple coversational forms and simple sentence patterns. Focus on the spoken language, with some attention to the Japanese kana phonetic syllabary.

602. (LIN) Japanese II.
Prerequisite: JAP 601.
More complex structures; practice in conversational Japanese; practice in reading and writing, with a limited number of kanji.

603. (LIN) Japanese III.
Prerequisite: JAP 602.
Attention to achieving familiarity with a wide range of constructions and practice in spoken Japanese; also emphasis on reading and writing.

604. (LIN) Japanese IV.
Prerequisite: JAP 603.
Equal emphasis on fluency in spoken Japanese and reading skills.

SANSKRIT (SKT)

661. (LIN) Structure of Sanskrit I.
An introduction to the phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

662. (LIN) Structure of Sanskrit II.
Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

663. (LIN) Structure of Sanskrit III.
Introduction to the Vedic dialect of Sanskrit, emphasizing the similarities and contrasts between Vedic and the classical language. A selection of Vedic hymns will be read intensively, with attention to the nature of Vedic religion.

MATHEMATICS (MAT)

James C. Cantrell
(Boyd Graduate Studies Building, South Campus)

The Department of Mathematics offers the M.A. degree and the Ph.D. degree. It also cooperates with College of Education in the M.Ed. degree with a major in mathematics and the Ed.D. degree with a major in mathematics education.

Doctoral language requirement: two languages (French, German or Russian)

601. Differential Equations.
Prerequisite: MAT 254.
Elementary differential equations with applications to geometry and physics. Intended for students in agricultural engineering.

603. Numerical Analysis I. 4 hours.
Prerequisite: MAT 253–255 and STA 500 or 431.
Recommended corequisite: MAT 256.
Iterative techniques for the numerical solution of nonlinear equations; polynomial interpolation; numerical integration; error analysis; digital computer problems and applications.

604. Numerical Analysis II. 4 hours.
Prerequisite: MAT 603. Recommended corequisite: MAT 358.
Numerical solution of systems of linear equations, matrix inversion, eigenvalues, numerical solution of ordinary differential equations, and digital computer applications.

605. Numerical Analysis III. 4 hours.
Prerequisite: MAT 604.
Iterative methods for the solution of systems of nonlinear equations; splines; linear and convex programming; digital computer applications.

608. Linear Optimization.
Prerequisite: MAT 256. Corequisite: A programming course.
Intended to develop understanding of mathematical foundations as well as practical working knowledge of linear optimization.

609. Nonlinear Optimization. 3 hours.
Prerequisite: MAT 408.
Nonlinear programming, Kuhn-Tucker Conditions, Convex programming Quadratic Programming, Goemetric Programming. Applications from various disciplines will be in-

terspersed throughout the development. No knowledge of computer programming needed in the course. (Not for graduate credit for mathematics majors.)

610, 611, 612. Advanced Calculus. 3 hours each.
Prerequisite: MAT 255 and 256.
The concepts, methods, and applications of advanced multivariable calculus. Partial differentiation, implicit functions, multiple integrals, line and surface integrals, differential forms and the classical integral theorems of vector analysis. Infinite series, Fourier series, improper integrals, special functions. The calculus of variations. This course emphasizes the conceptual understanding of multivariable calculus that is required for the solution of concrete problems and applications to other areas.

614, 615, 616. Introductory Topology. 3 hours each.
Prerequisite: Three senior division mathematics courses.
An introductory course in point set topology.

620, 621, 622. Partial Differential Equations and Problems of Applied Mathematics. 3 hours each.
Prerequisite: MAT 256, 358.
Formulation of mathematical models for applied problems, initial value and boundary value problems, separation of variable and integral transform methods, special functions, integral equations, variational methods, applications.

623. Mathematical Models in Biology I. 3 hours.
Prerequisite: MAT 253, 254.
Construction, use and evaluation of mathematical models for the biological sciences. Compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models. Emphasis on construction and use of models by students in their own research. (Not for graduate credit for mathematics majors.)

624. Mathematical Models in Biology II. 3 hours.
Prerequisite: MAT 423 or 623.
A continuation of Mathematics 623, studying specific models and related mathematics more throughly, as determined by the interest of those enrolled. More emphasis on model use and evaluation. (Not for graduate credit for mathematics majors.)

631. Theory of Numbers I.
Prerequisite: MAT 254.
An elementary course in number theory.

632. Theory of Numbers II.
Prerequisite: MAT 631.
A continuation of Theory of Numbers I.

640. Introduction to Higher Algebra. 3 hours.
Prerequisite: MAT 256.
A more sophisticated, deeper treatment of linear algebra than MAT 256.

641. Introduction to Higher Algebra. 3 hours.
Prerequisite: MAT 640 or 631 and MAT 256.
An introductory course in group theory. Examples of groups, permutation groups, quotient groups, homomorphism and isomorphism theorems.

642. Introduction to Higher Algebra. 3 hours.
Prerequisite: MAT 641.
An introductory course in ring and field theory. Examples of rings, polynomial and matrix rings, ideals, difference rings, homomorphism and isomorphism theorems, fields and field extensions.

645. Applied Linear Algebra. 3 hours.
Prerequisite: MAT 256.
A course treating those aspects of linear and matrix algebra found to be frequently useful in a variety of non-mathematical fields. Topics selected from: solution of systems of linear equations (direct and iterative); calculation of eigenvalues; generalized inverses; convexity; properties of non-negative matrices.

653, 654, 655. Introduction to Analysis. 3 hours each.
Prerequisite: Three senior division mathematics courses.
An introductory course in functions of a real variable; elementary topology of metric spaces; continuous functions; differentiation and Riemann integration; measure theory and the Lebesque integral.

659. Vector Analysis.
Prerequisite: MAT 255 and 256.
Calculus of vector functions. Line and surface integrals. Green's theorem, the divergence theorem, Stokes' theorem and physical applications.

660. Advanced Differential Equations I. 3 hours.
Prerequisite: MAT 256 and 358.
Laplace transforms, convolution theorem, Green's functions, vibrating spring problem, series solutions, regular singular points, Bessel's equation, Hermite's equation, Euler equations.

661. Advanced Differential Equations II. 3 hours.
Prerequisite: MAT 660.
Systems of linear differential equations, eigenvalues, double harmonic oscillation, inductance-capacitance circuits, existence and uniqueness theorems, numberical methods, boundary value problems.

663. Elementary Differential Geometry.
Prerequisite: MAT 255.
An introduction to the geometry of curves and surfaces in Euclidean space. Frenet formulas for curves and Gaussian curvature of surfaces. Physical applications, non-Euclidean geometries.

665. Introduction to Complex Variables.
Prerequisite: MAT 255.
Introductory course in complex variable theory with applications.

671, 672, 673. Advanced Probability Theory I, II, III. 3 hours each.
Prerequisite: MAT 255, 256, or 358.
Probability concepts, random variables, probability spaces, distribution functions, expectation, conditional distributions, independence, law of large numbers and central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes. Applications in Biology and Economics and emphasized.

702. Basic Ideas of Arithmetic.
Prerequisite: MAT 100.
A course designed to give elementary teachers a clearer understanding of the fundamental ideas of arithmetic. The operations of arithmetic will be studied in several number systems. For credit toward Master of Education degree only.

703. Basic Ideas of Algebra and Geometry.
Prerequisite: MAT 502 or 702.
A continuation of Mathematics 702 designed to give elementary teachers a clearer understanding of some of the important ideas of algebra and geometry. For credit toward the Master of Education degree only.

704, 705, 706. Basic Ideas of Calculus. 5 hours each.
Prerequisite: MAT 254 or consent of instructor.
A brief survey of the principal ideas and techniques of calculus from a modern point of view. Intended as a refresher course for high school teachers who feel the need for an understanding of calculus in order to prepare their students for college work. For credit toward the Master of Education degree only.

710. Fundamental Ideas of Algebra.
Prerequisite for graduate credit: MAT 100–101 and either two mathematics courses numbered over 200 or two years of teaching high school algebra.
A course designed to help teachers of high school algebra. It will stress those fundamental ideas, some of which are modern, which determine the structure of elementary algebra.

714. Elementary Set Theory for Teachers.
Prerequisite: MAT 254 or two years experience as a mathematics teacher.
An elementary course in the theory of sets. Contains applications to topology. For credit toward Master of Education degree only.

716. Modern Algebra for Teachers.
Prerequisite: MAT 100–101 and either two mathematics courses numbered over 200 or two years experience as a mathematics teacher.
An introduction to matrices, vectors and linear programming. For credit toward Master of Education degree only.

720. Foundations of Geometry. 3 hours.
Prerequisite: MAT 100–101 or 116 or two years of teaching high school geometry.
A course in more advanced elementary geometry especially designed for prospective teachers of secondary school mathematics.

721. Advanced Topics in Geometry. 3 hours.
Prerequisite: MAT 720.
A continuation of MAT 720.

722. Transformation Geometry. 3 hours.
Prerequisite: MAT 720.
Transformation geometry.

756. Fundamentals of Probability and Statistics.
Prerequisite: Two mathematics courses numbered 200 or above or two years' experience teaching high school mathematics.
Fundamental ideas of probability with particular emphasis on their applications in statistics.

Unless otherwise stated the prerequisite to any 800 numbered course is three courses having Mathematics 254 as a prerequisite.

800, 801, 802. Topics in Analysis. 5 hours each.
Prerequisite: MAT 655.
Integration and measure, especially Lebesque and Lebesque-Stieltjes measure, Riesz Representation Theorem, differentiation of measures, product measures, Lp spaces, elementary theory of Hilbert and Banach spaces, Fourier transforms.

804, 805, 806. Methods of Applied Mathematics. 5 hours each.
Prerequisite: Undergraduate applied mathematics or instructor's permission.
Green's function methods, system theory, state space equations, generalized functions and equations of physics, generalized Fourier series and special functions, transform methods, differential and partial differential equations, wave equations, integral equations, asymptotic expansions and steepest descent methods, Pontrjagin's variational methods and control theory,

generalized coordinate transformations, tensor calculus.

807, 808, 809. Probability and Stochastic Processes. 5 hours each.
Prerequisite: MAT 804, 805, 806.
Meaning of probability, probability spaces, stochastic processes, statistical measures, transformations of stochastic processes, limit theorems and statistics, matrix methods for multivariate Gaussian distributions, ergodic theorems, Karhunen-Loeve expansions, special processes, Markov theory, properties of transformed processes, applications.

810, 811, 812. Point Set Theory. 5 hours each.
Separation axioms, compactness, local compactness, para-compactness, product topologies, metrization theorems, embeddings, retracts, extension theorems, fixed point theorems, quotient spaces, function spaces, fundamental groups, local connectedness, covering spaces, homotopy lifting property, simplicial homology and cohomology.

814, 815, 816. Analytic Functions of a Complex Variable. 5 hours each.
Cauchy-Riemann equations, Cauchy's Theorem and its consequences, residue theory, analytic continuation, harmonic functions, conformal mapping, Riemann Mapping Theorem, elliptic functions, Mattag-Leffler and Weierstrass Theorems, elementary theory of Riemann surfaces.

817, 818, 819. Probability Theory. 5 hours each.
Prerequisite: MAT 800, 801, 802.
The course assumes no knowledge of probability but a knowledge of measure theory. Probability is developed by the axioms of Kolmogorov. The course starts with the properties of distributions, characteristic functions, stochastic independence and the basic limit theorems. Then the strong limit theorems are discussed, accumulatively in a very general form of the Central Limit Theorem. The course concludes with the investigation of conditional expectation and martingale theory with their application to stochastic processes via Brownian motion.

821, 822, 823. Algebraic Topology. 5 hours each.
Complexes, combinatory homology theory, function spaces, fiber spaces, covering spaces, homotopy groups, singular homology theory, exact couples, special sequences and applications.

830, 831, 832. Topics in Topology. 5 hours each.
A continuation of Point Set Theory. Selected topics in topology.

833. Advanced Numerical Analysis I.
Prerequisite: MAT 605 or consent of the instructor. Recommended corequisite: MAT 653 or MAT 610.
Existence, uniqueness and covergence theorems for linear and nonlinear systems of equations; algorithms for calculating eigenvalues and eigenvectors; digital computer applications.

834. Advanced Numerical Analysis II.
Prerequisite: MAT 833.
Numerical integration in one or more dimensions; numerical solution of ordinary and partial differential equations; numerical solution of integral equations; digital computer applications.

835. Advanced Numerical Analysis III.
Prerequisite: MAT 834. Recommended corequisite: MAT 665.
General interpolation and approximation theory; remainder theory; approximation of linear functionals; Hilbert space theory and applications to numerical analysis; digital computer applications.

840, 841, 842. Functional Analysis. 5 hours each.
Prerequisite: MAT 802 or instructor's consent.
Banach spaces, the three basic principles of functional analysis; linear topological spaces, local convexity, and the Krein-Milman theorem; spectral theory for operators in Banach space, Riesz theory for compact operators; Hilbert spaces, spectral theorem for normal operators, an introduction to operator theory, application to operator equation.

843, 844, 845. Modern Algebra. 5 hours each.
Prerequisite: MAT 642.
Group theory, including the Sylow Theorems, Jordan Hölder Theorem and Fundamental Theorem of Finitely Generated Abelian Groups; ring theory, including ideal theory and Wedderburn's Theorem; field theory including Galois theory; advanced linear algebra.

850, 851, 852. Topological Algebriac Structures. 5 hours each.
Prerequisite: MAT 810, 811, 812.
The topology of spaces admitting continuous multiplication. Including one or several of the following: topological groups, Lie groups, topological semi-groups, H-spaces, topological lattices and semi-lattices.

860. Ordinary Differential Equations I.
Prerequisite: MAT 256, 655, or consent of the instructor.
The basic theory of ordinary differential equations: existence and uniqueness of solutions, Gronwall's Inequality, continuation of solutions, dependence on initial conditions and parameters, linear systems, Floquet Theory.

861. Ordinary Differential Equations II.
Prerequisite: MAT 860.
The basic qualitative theory of ordinary differential equations: autonomous systems, limit sets and limit cycles, Poincaire-Bendixson Theorem, stability of periodic solutions, stationary points in the plane, perturbed linear systems, Wazewski's Theorem.

862. Ordinary Differential Equations III.
Prerequisite: MAT 861.
The classical second order theory: Sturm-Liouville boundary value problems, singular boundary value problems, use of Implicit Function Theorem and fixed point theorems.

863, 864, 865. Algebraic Geometry. 5 hours each.
Prerequisite: MAT 812 and 845.
An introduction to classical algebriac geometry followed by a study of recent applications of topological methods to problems in this area. Topics discussed may include: affine and projective algebraic varieties, Hilbert's Nullstellensatz, sheaves and vector bundles, Chern classes, and holomorphic and meromorphic functions.

880, 881, 882. Stochastic Differential Equations. 5 hours each.
Prerequisite: MAT 807, 808, 809.
Modelling of dynamical systems, linear and nonlinear stochastic differential operator equations, stochastic distribution theory, computer solution of stochastic differential equations.

891. Seminar in Topology.
Prerequisite: MAT 812 or consent of the instructor.
A study by the seminar methods of some phase of current research in topology.

892. Seminar in Algebra.
Prerequisite: MAT 845 or consent of the instructor.
A study by the seminar method of some phase of current research in algebra.

893. Seminar in Analysis.
Prerequisite: MAT 802 or consent of instructor.
A study by the seminar method of some phase of current research in analysis.

894. Seminar in Numerical Analysis. 1–5 hours.
Prerequisite: MAT 835 or consent of the instructor.
The study of special topics in numerical analysis by the seminar method.

895. Stochastic Systems Seminar. 1–5 hours.
Prerequisite: MAT 880, 881, 882.
Frontier methods, study of journal papers and recent books, dissertation research in stochastic differential equations, stochastic operator theory, etc. Visiting speakers and staff covering various topics of interest.

896. Applied Mathematics and Computer Science Seminar. 1–5 hours.
Prerequisite: MAT 880, 881, 882.
Recent work. Dissertation research. Large complex systems and other special topics. Applications in aerospace engineering, physics, ecology, meteorology.

930. Thesis in Mathematics. 5–50 hours.
With the approval of his major professor, a candidate for the M.A. degree may take fifteen hours at the 800 level in lieu of writing a thesis.

MEDICAL MICROBIOLOGY (MMB)

J. B. Gratzek
(Veterinary Building; Poultry Disease Research Center, South Campus)

Doctoral language requirement; one language.

Graduate work is offered in medical microbiology leading to the M.S. degree. The Ph.D. degree is offered in conjunction with the Department of Microbiology, College of Arts and Sciences. Thesis specialization may be in any of the four areas: biology of pathogenic microorganisms, immunology-immunochemistry, animal virology, or infectious diseases of mammals, avian species, and fish. Two types of students are accepted for graduate training: those with bachelor degrees and an interest in medical microbiology and those with a D.V.M. degree or other medical degree who desire advanced training in this area.

Instruction in medical microbiology is coordinated with the course offerings in the microbiology department of the College of Arts and Sciences; and with the agronomy, food science and dairy science departments of the College of Agriculture. Suitable courses in these departments are included in students' programs as advisable. Instruction in infectious diseases is coordinated with work in the pathology and medicine and surgery departments of the College of Veterinary Medicine, the Poultry Disease Research Center, and the Southeast Poultry Research Laboratory.

Excellent facilities and equipment are available for research needs. Laboratory space is available for cell culture and virological studies, bacterial physiology, immunology and immunochemistry, diagnostic microbiology, gnotobiology, and fish disease research.

600. Principles of Epidemiology. 3 hours. (Brown)
Prerequisite: Two courses in microbiology and consent of instructor.
Studies in principles of epidemiology, epidemiologic methods, population characteristics, effects of disease on populations, measurements of disease frequency including statistical interpretation of epidemiological data, and exercises utilizing the holistic approach to population-disease relationships.

602. Diseases of Cultured Fishes. 5 hours. Three lectures and two double laboratory periods. (Gratzek)
Prerequisite: MMB 622 or equivalent.
A detailed study of diseases associated with the culture of warm water, cold water, and marine fishes. Specific disease entities are covered according to etiology, epidemiology, pathogensis, diagnosis, prevention, and control. Laboratory sessions will cover laboratory methods utilized in the study of fish disease.

610 (MIB) Immunology. 5 hours. Three lectures and two double laboratory periods. (De Buysscher)
Prerequisite: MMB 380 (or MIB 409/609) and BCH 310, or consent of instructor.
Mechanisms of infection and host resistance; principles and techniques of serology.

622. (MIB) Pathogenic Bacteriology. 5 hours. Three lectures and two double laboratory periods. (VanEseltine)
Prerequisite: Two courses in microbiology (immunology recommended).
Studies on the morphological, cultural and physiological properties of the important pathogenic bacterial and mycotic agents; their relation to health and disease is emphasized.

639. Diagnostic Microbiology. 5 hours. Two lectures and three double laboratory periods. (Shotts)
Prerequisite: MMB 410 or 610 and 422 or 622 or equivalent.
A course presenting an application of basic microbiologic techniques to the problems associated with the recovery of disease organisms from clinical materials. Emphasis is placed on methodology and problems involved in laboratory isolation and identification.

650. (MIB) Virology. 5 hours. Three lectures and two double laboratory periods. (Lukert)
Prerequisite: MMB/MIB 610 and BCH 310.
An introduction to the viruses and rickettsiae; principles and methodology.

680. Environmental Health. (Brown)
Prerequisite: Two courses in microbiology.
An introduction to environmental health in which emphasis is placed upon preventative medicine, epidemiologic methodology, infectious diseases, nutritional and deficiency diseases, and occupational health.

810. (MIB) Immunochemistry. 5 hours. Two lectures and three double laboratory periods. (De Buysscher)

Prerequisite: MMB 610 and BCH 802, or consent of instructor.
Detailed investigation into the chemistry of antigenically active substances and mechanisms of immunological reactions. Lecture emphasis will be on current literature.

816. Seminar in Medical Microbiology. 1 hour.
Max. 3 hours per degree.
Prerequisite: Available to majors in microbiology or allied sciences with two courses in microbiology as prerequisite.
Semi-formal meetings for discussion of research and new developments in the field. Attendance required of all medical microbiology graduate students.

820. (MIB) Advanced Pathogenic Microbiology. (Kadis, Roth, VanEseltine)
Prerequisite: MMB/MIB 622 and 650.
A detailed study of the pathogenic bacteria and their relationship to disease at the biochemical level. Offered in the even numbered years only.

821. Advanced Experimental Procedures in Pathogenic Bacteriology. 5 hours. Two lectures or discussion periods and three double laboratory periods. (Kadis)
Prerequisite: MMB/MIB 820 and BCH 802.
A course designed to acquaint the advanced student with experimental procedures used in studying pathogenic bacteria from the point of view of elucidating the various mechanisms by which bacteria cause disease. Areas to be covered include isolation, identification, and analysis of the biological and chemical properties of bacterial toxic products, initiation of infection, aggressive activity, and host and tissue specificity.

830. Immunobiology. 5 hours. Three lectures and two double laboratory periods. (Dawe)
Prerequisite: MMB/MIB 610 and BCH 802 or consent of instructor.
The objective of this course is to provide the student with further insight into the immune mechanism. Reactions of the host such as antibody production, delayed hypersensitivity, graft rejection and anaphylaxis will be emphasized. Recent findings in immunology will be considered in light of their theoretical implications to biology and medicine.

850. Animal Virology. 5 hours. Three lectures and two double laboratory periods. (Lukert)
Prerequisite: MMB/MIB 610 and BCH 802 or consent of instructor.
A detailed study of the biological and physicochemical characteristics of animal viruses stressing the cytological and biochemistry alterations in infected cells. Reactions involving the entire host are minimized in this course except in cases where distinct host reactions are a phenomenon common to many viruses.

900. Problems in Microbiology. 1–10 hours.
Max. 10 hours per degree.
Prerequisite: Adequate preparation in microbiology.
This course allows students to pursue intensive study under the direction of staff members, on approved problems in medical microbiology.

930. Thesis. 5–50 hours.

MICRO-BIOLOGY (MIB)

W. R. Finnerty
(Biological Sciences Building, South Campus)

Doctoral language requirement: one language.

Programs of study leading to both the M.S. and Ph.D. degrees are offered in the various fields of interest in microbiology. Research problems in general and applied aspects of the science are available. Excellent facilities for research by faculty members and graduate students are available. These include: electron microscopy laboratories, a fermentation laboratory, the laboratories of the Marine Institute at Sapelo Island, and laboratories very well equipped for physiological, immunochemical, pathogenic, taxonomic, genetic, and cytological studies. The department is well equipped for conducting studies that require the use of radioactive isotopic tracers, analytical ultracentrifugation, gas-liquid chromatography, and fairly complex computing. For more complex computing the members of this department's research groups may use the resources of the University Computer Center.

Acceptable applicants for graduate study in microbiology may be enrolled at the beginning of any quarter. Prospective students should have credit for courses in either calculus or elementary statistics and in both quantitative analytical and elementary physical chemistry. Those applicants with otherwise acceptable qualifications may expect to enroll in any of these courses they lack after admission to our program.

600. History of Microbiology. (Payne)
Prerequisite: 10 hours of microbiology.
Examination of the development of the science of microbiology with particular reference to contributions of scientists in microbiology and allied fields to intellectual thought and development. Significant literature of past and present is reviewed and discussed.

601. Clinical Bacteriology. 5 hours. Five double laboratory periods.
Prerequisite: 10 hours of microbiology or consent of instructor.
General diagnostic techniques encountered in modern medical and public health microbiology laboratories for the recovery and identification of microorganisms that cause disease. Studies of the bases for the strategies employed.

607. (FS) Microbiology of Foods.

609. Fundamentals of Microbiology. (Eagon, Fitzgerald)
Prerequisite: MIB 350 or consent of instructor.
Designed to present a comprehensive, in-depth treatment of the bacterial cell and to present problems confronting microbiologists. Attention will be given to the structure, growth, nutrition, chemistry, inheritance and physiological activities of the bacterial cell.

610. (MMB) Immunology. 5 hours. Three lectures and two double laboratory periods. (Inman)
Prerquisite: CHM 241 or 341, BCH 310 or their equivalents.
The course comprises a detailed study of the structure and biology of antigens, immunoglobulins, and complement, and methods for their detection. Immunization and its consequences, cells and tissues involved in the immune response, cellular immunity and immediate hypersensitivities are discussed in depth.

614. Advanced Laboratory Methods in Microbiology. 5 hours. Five double laboratory periods. (Eagon, Fitzgerald)
Prerequisite: MIB 350; recommended: MIB 409/609.
Instruction in the design and execution of experiments will be provided to acquaint the student with experimental techniques necessary for basic studies on bacteria. Attention will be given to elective culture techniques, growth and enumeration of bacteria, bioassay techniques, effects of irradiation and of chemical mutagens, selection of mutants, isolation of DNA, and enzymatic assay techniques.

621. (FS) Environmental Microbiology.

622. (MMB) Pathogenic Bacteriology. 5 hours. Three lectures and two double laboratory periods. (Roth)
Prerequisite: Ten hours of microbiology.
Studies of the morphological, cultural and physiological properties of the important pathogenic bacteria and their relation to health and disease.

650. (MMB) Virology. (Lansman)
Prerequisite: 10 hours of microbiology.
An introduction to the animal viruses. Emphasis is placed on hostcell interaction at the molecular level, modes of reproduction, and genetics of Viruses.

652. (DS) Microbiology for Sanitarians.

653. (DS) Microbiology of Fermented Dairy Foods.

659. (DS/EHS) Microbiology of Water and Wastewater.

661. (AGY) Soil Microbiology.

662. Aspects of Microbial Ecology. 5 hours. Three lectures and two double laboratory periods. (Wiebe)
Prerequisite: MIB 350, or consent of instructor.
The course emphasizes the role of microorganisms in ecosystems. Attention is given to the examination of nutrient cycles, methods of microbial analysis and the functional roles of microorganisms.

670. Medical Mycology. 5 hours. Two lectures of recitations and three double laboratory periods. (Michaels)
Prerequisite: MIB 350.
A survey of the yeasts, molds and actinomycetes most likely to be encountered by the microbiologist with special emphasis on the forms that are pathogenic for man and other animals.

680. Microbial Genetics. (Howe, Vapnek)
Prerequisite: BIO 320 or equivalent.
A study of the genetics of microorganisms, including fungi, bacteria and bacteriophage. The use of microorganisms as model systems for genetic analysis, as well as their important contributions to the field of genetics will be discussed.

701. Microbiology for Teachers. 5 hours. Three lectures and two double laboratory periods. (Michaels)
Prerequisite: 20 hours of biological science or 10 hours of biological science and 10 hours of chemistry.
Specifically for students who plan to teach in some area of microbiology. Emphasis will be placed on techniques and solutions to problems encountered in the teaching of the classification of microorganisms, their activities, industrial and agricultural applications, and public health aspects. The laboratory will stress innovative techniques for the high school and college microbiology teaching laboratory.

800. (FS) Industrial Fermentation.

810. (MMB) Immunochemistry. 3 hours. Two lecture or discussion periods. (Inman)
Prerequisite: BCH 802, MIB 610 or consent of instructor. Offered in even numbered years.
Emphasis will be on current literature dealing with areas of immunology undergoing intense research at the molecular level.

816AB. Seminar in Microbiology. 1 hour each.
Prerequisite: Available to majors in microbiology or allied sciences with two courses in microbiology.
Semi-formal meetings for discussion of research and new developments in the field. Attendance required of all microbiology graduate students.

820. (MMB) Advanced Pathogenic Microbiology.

840. Advanced Electron Microscopy. 5 hours. Daily double laboratory periods. (Michaels, Roth)
Prerequisite: BIO 501 or 701, or consent of instructor.
Directed laboratory experience in specialized methods used in electron microscopy.

860. Physiology of Bacteria. (Finnerty, Payne)
Prerequisite: MIB 609; BCH 801 and 802.
A survey of modern physiological and biochemical relationships and concepts in microorganisms. Emphasis on specialized aspects of intermediary metabolism, macromolecular syntheses, and microbial lipids.

861. Advanced Microbial Metabolism. (Finnerty, Payne)
Prerequisite: MIB 860 or consent of instructor.
Examination of the development and current knowledge of microbial physiology. Significant literature of past and present is reviewed and discussed.

881. Advanced Microbial Genetics. (Baldwin, Howe)
Prerquisite: MIB 680 or equivalent.
Studies of recent advances in the genetics of bacteria, fungi, viruses and other microorganisms with particular emphasis on contributions both to and from such areas as molecular and developmental biology, immunology, physiology, and ecology.

900. Problems in Microbiology. 1–5 hours.
Prerequisite: Must be preceded by at least two graduate courses in microbiology.
This course allows students to pursue intensive study under the direction of staff members, on approved problems in the various fields of microbiology. Maximum credit 50 hours with no more than 10 hours credit with grade toward any one degree.

930. Thesis. 5–50 hours.

MUSIC (MUS)

David Ledet
(Fine Arts Building, North Campus)

The Master of Fine Arts degree is offered in composition, music literature or applied music.

Students concentrating in musicology should enroll for the Master of Arts degree.

Students desiring fifth year certification as teachers of music in the public schools should enroll for the Master of Music Education degree offered in cooperation with the College of Education. Details of the program may be found on page 33.

Students desiring sixth year certification as teachers of music in the public schools should enroll for the Specialist in Music Education Program (Sixth Year Program) offered in cooperation with the College of Education. Details of the program may be found on page 34.

The Doctor of Education degree with subject matter concentration in music education is offered in cooperation with the College of Education.

600. Special Problems in Music.

620. Ancient and Medieval Music.
Offered alternate years. Given 1977–78.
A survey of music from the birth of Christianity to ca. 1400, with an introduction to the place of music in Greek and Roman societies.

621. Music in the Renaissance Period. (Howell)
Offered in alternate years. Not given 1977–78.
A music history and literature course covering the Renaissance period, 1400–1600.

622. Music in the Baroque Period. (Howell)
Offered alternate years. Given 1977–78.
A study of musical styles and forms from Monteverdi through Bach and Handel.

623. Music in the Classic Period. (Mitchell)
Offered alternate years. Not given 1977–78.
A study of chamber, orchestral, keyboard, and operatic works from the middle and late 18th century.

624. Music in the Romantic Period.
Offered alternate years. Given 1977–78.
An intensive study of the Romantic period; emphasis on the development of the song, symphony, chamber music, and opera.

630. Keyboard Literature. 3 hours.
A survey of music composed for harpsichord and piano from the Renaissance period to the present day.

631. Song Literature. 3 hours.
Offered alternate years. Not given 1977–78.
An introduction to the major styles of song composition from the time of the troubadours to the present.

632. String Literature. 3 hours.
Offered alternate years. Given 1977–78.
The study of string music from the Italian baroque to the present day.

636. Opera Literature. 3 hours.
The study of representative operas from the Baroque era to the 20th century.

637. Organ Literature. 3 hours. (Ennulat)
Offered alternate years. Not given 1977–78.
A survey of the development of organ music in relation to the development of the instrument itself.

638. Seminar in Sacred Music Literature. (Ennulat)
Prerequisite: 10 hours of senior division music literature courses.
Historical development of the large forms of sacred music: the oratorio, the cantata, the passion. Offered alternate years. Not given 1977–78.

640. Non-Western Music. 3 hours.
Offered alternate years. Given 1977–78.
An introduction to the music on non-European cultures, including those of the Far East, Near East, and Africa.

641. Bibliography.
An introduction to the existing body of material, including music and books on music, which serves as the basis for musical research, and to the procedures and techniques used in research.

655. Advanced Music History. (Ennulat, Howell)
Special studies in history and literature of music.

658. Wind Instrument Literature. 3 hours. (Waln)
A survey of the solo, sonata, and ensemble music composed for wind instruments, from the Baroque period to the present.

662. Modern Music.
A literature course illustrating modern trends in music of Schoenberg, Stravinsky, Hindemith, Bartok, and others.

670. Form and Analysis. (Corina)
Prerequisite: Music 310.
Harmonic and polyphonic forms analyzed. Students are encouraged to write originally in forms thus analyzed.

671. Sixteenth Century Counterpoint. (Ennulat)
Offered alternate years. Not given 1977–78.
Prerequisite: MUS 310.
The contrapuntal style and techniques of the sixteenth century; acquaintance with species counterpoint.

675. Eighteenth Century Counterpoint. (Ennulat)
Offered alternate years. Given 1977–78.
Prerequisite: MUS 310.
A study of late-baroque contrapuntal techniques and styles.

679. Introduction to Electronic Music. 3 hours. (Corina)
Prerequisite: MUS 310.
An introductory course in electronic music: systems, composition, and literature.

691. Chamber Music Ensemble. 1 hour per quarter. Max 6 hours.
One hour per week. Open to students who can qualify in keyboard, string, or wind instruments.

710. Advanced Theory. 3 hours. (Corina)
Prerequisite: MUS 310 and satisfactory score on graduate music theory diagnostic examination.
A survey of harmonic and rhythmic resources, with emphasis upon aural and visual analysis.

712. Advanced Techniques for Teaching Music in the Elementary School. 3 hours. (Hair)
Prerequisite: MUS 312 or consent of instructor.
A study of objectives, curriculum content, teaching techniques, student evaluation, and supervision in elementary school music.

714. Workshop for Teachers in Music Education. (Hair)
Study of techniques and materials for the elementary school music program. This course is designed for teachers who are not music specialists.

724. Musical Productions for the Public Schools. (Leglar)
Prerequisite: Senior level or for music majors.
Techniques and methods for directing and producing musical comedy, operetta, and light opera in the public schools. Includes a survey of available materials for elementary, middle, and high school levels.

726. Marching Band Techniques and Methods. 3 hours.
Methods and techniques for organizing and training marching bands. Planning music, drills, formations and shows.

730. General Music in the Secondary School. 3 hours. (Placek)
Prerequisite: MUS 313.
Study of structure and content of general music in the secondary school with emphasis on teaching materials and techniques.

731. Problems in Vocal Music Education. 3 hours. (Simons)
Prerequisite: MUS 312 and 313.
Study of voice problems from classroom point of view beginning in elementary and continuing through secondary school; techniques used in choral ensembles, evaluation of present concepts and practices.

732. Problems in Instrumental Music Education. 3 hours. (Dancz)
Prerequisite: MUS 312 and 313.
Study of techniques used for development of the instrumental music program beginning in elementary and continuing through secondary school; diagnosis of problems relating to strings, woodwinds, brass, percussion.

733. Music Administration and Curriculum. 3 hours. (Lowe)
Prerequisite: Undergraduate requirements in education, MUS 312 and 313.
Development of music curriculum as part of general education planning; evaluation of school curricula and how music can become a functional part; problems in music administration.

734. Choral Music Material. 3 hours. (Simons)
Prerequisite: MUS 312 and 313.
Study and evaluation of music literature available for use in public schools at all levels of instruction; research in various mediums and schools of composition adaptable for school use.

735. Instrumental Music Material. 3 hours. (Harriman, Dancz)
Evaluation of materials available at all levels of instruction for band, orchestra and chamber music; research in materials of various mediums and schools of composition which can be adapted to school use.

738. Advanced Conducting. 3 hours. (Ligotti)
Prerequisite: MUS 362, 363, or 364.
An intensive study of choral and instrumental conducting techniques and their application in laboratory sessions.

739. Repair, Care, and Acoustics of Instruments. 2 hours.
A practical study of the proper repair and care of musical instruments in conjunction with the acoustical properties of each instrument. Supervised workshop in basic repairs common to the school situation.

740. Principles of Music Therapy I. 3 hours. (Graham)
A study of music as human behavior, and its use

with the handicapped and those suffering behavioral disorders.

741. Principles of Music Therapy II. 3 hours. (Graham)
Prerequisite: MUS 740.
A study of the functions of the music therapist with emphasis on the use of music in a therapeutic environment.

744. The Influence of Music on Behavior. (Graham)
Prerequisite: BIO 101, 102; PSY 423; ZOO 212.
A study of the various physiological effects of music. The place of functional music in music education. Investigation of effective media and musical patterns. The relation of music to health. Music in industry.

745. Clinical Experience. 3 hours. (Graham)
Prerequisite: Completion of junior year in bachelor of music with major in music therapy. Three months' work as a general aide in an approved psychiatric hospital for practical clinical experience.

746. Music in Recreation. 3 hours. (Graham)
Prerequisite: MUS 246.
Methods and techniques of teaching music through the use of social and recreational musical instruments.

747. Music for Exceptional Children. (Graham)
Prerequisite: MUS 201, or 303, or EXC 500.
Designed to prepare teachers of exceptional children to teach music in special classrooms or in settings where exceptional children are integrated into the regular music classes.

751. Instrumental Techniques. 2 hours per quarter. Max. 6 hours.
An advanced study of the performance and teaching techniques of wind, string, and percussion instruments.

762. Jazz Piano Improvisation Class. 3 hours. (Placek)
Prerequisite: MUS 246F.
Application of skills and techniques in keyboard jazz playing based upon a knowledge of modern-popular harmonic and notational practices.

781. Applied Music. 1 hour per quarter. Max. 6 hours.
One 25-minute lesson a week. Applied music in secondary performance media for graduate students in music education.

782. Applied Music. 2 hours per quarter. Max. 6 hours.
Applied music for music education graduate students in their field of performance concentration.

783. Applied Music. 3 hours.
Applied music for graduate students in their field of performance concentration.

785. Applied Music.
Two 25-minute private lessons a week and one-hour seminar as arranged. Primarily for the major performance medium of music students in the MFA program. Others by permission of the head of the music department.

790. Symphonic Wind Ensemble. 1 hour.
(Ligotti) Admission by audition.
Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores, and emphasis on contemporary music.

791. Collegium Musicum. 1 hour.
A study of the inter-relationship of music history, theory, and performance.

792. Chamber Music Ensemble. 2 hours.
One hour a week. Preparation of representative works with faculty members and qualified students.

793. Chamber Music Ensemble. 3 hours.
One hour a week. Preparation of representative works with faculty members and qualified students; to include public recital.

821. Music Education Seminar. (John)
Prerequisite: Music 733.
A study of basic principles and current thought in music education.

860. Seminar in Music Theory.
Prerequisite: Music 670, and 710.
A study of theoretical concepts from all periods of Western music.

867. Special Studies of Composers.
(Mitchell, Howell).
An intensive study of the works of selected composers. Offered alternate years. Given 1977–78.

868. Chamber Music Literature.
The study of the important chamber music works from the Italian trio sonata to Bartok. Emphasis on study and analysis of major works.

871. American Music. (Mitchell, John)
The development of music in North America from 1620 to the present.

873. The Concerto. (Mitchell)
A survey of the concerto grosso and solo concerto literature from the seventeenth century to the present day.

874. Psychology of Music. (Parker)
A survey of experimental findings and research methods in the psychology of music.

879. Advanced Composition. (Corina)
Prerequisite: MUS 384 or 478 and consent of instructor.
Writing in various forms. Public performance of major original composition in large form.

880. The Symphony after Beethoven. (Mitchell)
Prerequisite: 10 hours of senior division music literature courses.
Historical development of the symphony and the orchestra.

885. Applied Music.
Fifty minutes of private instruction and a one-hour seminar each week. Primarily for the major performance medium of post-master's music students.

927. Music Problems.
Prerequisite: Graduate standing in music.
Functional study of a topic or problem significantly related to the student's professional goal.

930. Thesis. 5–50 hours.

PHARMACY (PHR)

Joseph P. LaRocca
(Pharmacy Building, South Campus)

Doctoral language requirement: one language.

Graduate work leading to the M.S. and Ph.D. degrees may be pursued in the areas of the pharmaceutical sciences.

Graduate studies in pharmacy explore and define the physical and chemical properties of pharmaceutical systems, and the mechanisms by which medication from these systems may be made available for utilization by the body. Areas of specialization include pharmaceutics, biopharmaceutics, industrial pharmacy and institutional pharmacy. The program in institutional pharmacy is limited to the M.S. degree, with a program option of (a) general institutional pharmacy, (b) pharmacy administration, and (c) clinical pharmacy.

Pharmacology is the study of the action of chemicals on living organisms, the effects induced and their therapeutic applications. As a scientific discipline, it is based on the physical and biological sciences with particular emphasis on physiology and chemistry. Specific programs are available in neuro-pharmacology, behavioral pharmacology, biochemical pharmacology, cardiovascular pharmacology and toxicology.

Medicinal chemistry is unique among the specialized areas of chemistry, in that it requires a significant background in the biological sciences as well as a thorough understanding of chemistry. Areas of specialization are the synthesis of new compounds of medicinal interest, the relationships between physical and chemical properties and biological activity and studies on the mechanisms of drug action.

Pharmacognosy is that branch of pharmaceutical science concerned with the commerce, identification and purification of natural substances used as drug products, and with the isolation, purification and identification of the constituents of natural medical agents. Students majoring in pharmacognosy will have a broad training in botany, chemistry and biochemistry. Graduate studies are offered in pharmacy care administration with four options open to the student. Option A, social sciences of pharmacy, is an interdisciplinary program. Option B, behavioral and management studies, an interdisciplinary program with a human relations orientation. Option C, graduate studies in adult education, is an interdepartmental program for pharmacy and education graduates who desire a career in the continuing education of health professionals. Option D, hospital pharmacy administration.

For any graduate course in the area of pharmacy the prerequisites are two senior division courses in pharmacy or related subjects. Graduate students in pharmaceutical sciences need not have a pharmacy degree but will be required to have an equivalent background in the physical or biological sciences.

Unless otherwise specified, all laboratory periods are three hours.

633, 634, 635. Principles of Drug Action. 5,6,6 hours respectively. Five hours weekly for 633, five hours lecture and one laboratory weekly for 634 and 635.
Prerequisite: Consent of instructor.
A study of the action of drugs in current use, emphasizing the chemical and pharmacological principles related to stability, bio-availability, structure-activity relationships, pharmacologic action, therapeutic application and toxicology. (Required for graduate students majoring in Medicinal Chemistry or Pharmacology having undergraduate degrees in fields other than pharmacy.)

675. Chemotherapy. 4 hours.
Prerequisite: MIB 352, PHR 350, 404, 434, and 447.
A discussion of the chemistry, mechanism of action, pharmacology and therapeutic applications of antiseptic, antibiotic, antifungal, antiprotozoan, anthelmintic, antiviral and oncolytic agents.

695. Pharmaceutical and Health Care Service. 5 hours. Two hours lecture and three-hour laboratory periods. (Francis, Jowdy)
A study of the principles and methods involved in the rendering of pharmaceutical and health care services. Included are the social, economic, legal and professional aspects and the study of the activities of providers and consumers of such services.

701. Public Health. 3 hours.
A broad perspective of the philosophy of public health, the need for health services, and the efforts to provide those services through health and health-related programs in the United States.

706. Microscopic Pharmacognosy. 3 hours. One-hour lecture and two laboratory periods. (Schramm)
Prerequisite: By permission.
A study of the microscopic methods and techniques of drug evaluation, with special emphasis on crude vegetable drugs.

721. Special Topics in Pharmacy. 3–5 hours.
A study of specialized pharmaceutical systems, processes, and techniques, including assignment of current literature and student presentations.

721ABC. Special Topics in Pharmacy. 3–5 hours each.

722. Industrial Pharmacy I. 5 hours. Two lectures and nine laboratory hours. (Price)
Prerequisite: By permission.
Lectures include a study of different equipment used in pharmaceutical manufacturing. Laboratory work involves pilot plant scale manufacturing.

723. Industrial Pharmacy II. 5 hours. Two lectures and nine laboratory hours. (Price)
Prerequisite: By permission.
Lecture and laboratory work place special emphasis on the more complicated procedures encountered in manufacturing. Methods and standards of pharmaceutical materials included.

724. Institutional Pharmacy. 3 hours.
A study of the history, organization structure, and operational policies and procedures of various types of health care institutions. Consideration is given to the pharmaceutical services rendered in hospitals extended care facilities, and nursing homes.

726. Sterile Products and Techniques.
5 hours. Two-hour lectures and nine hours laboratory.
Principles of manufacture and control of sterile products intended for injection, including aseptic techniques, methods of sterilization, and preparation of injections in small volumes.

727. Hospital Administration and Management.
(Cooper, Fechtel)
Prerequisite: By permission.
A study of the history, types, organizational structure, and operational policies and procedures of hospitals. Emphasis is given to the role and function of each department and how it relates to the pharmaceutical services as well as problems arising from internal and external factors.

760ABC. Clinical Seminar. 5 hours each.
Two-hour lecture and nine hours clinical rounds at hospital. (Stegeman, Cooper)
Prerequisite: By permission.

Aspects of the etiology, pathology, prognosis, and treatment of clinical cases are presented. Emphasis is placed on the drug therapy employed. Teaching rounds enable the student to observe drug treatment and patient care procedures.

770ABC. Clinical Clerkship. 5 hours each.
(Copp, Cooper, Moore, Warren, Wickliffe)
Prerequisite: By permission.
A combination of lectures, seminars, discussions, and practice experience in a clinical setting. Various clinical facilities are utilized to provide specialization in areas of the student's interest.

785, 786. Disease States and Therapeutics. 3 hours each.
Prequisite: PHR 635 or consent of instructor.
A discussion of disease states with emphasis on procedures involved in restoring the patient to normal health.

803ABC. Seminar. 1 hour each.
Prerequisite: Graduate standing.
Semi-formal meetings for discussion of research and new developments in the field.

809AB. Introduction to Medicinal Chemistry.
4 hours each.
Prerequisite: PHR 441 or its equivalent.
A detailed study of the correlation of chemical structure with biological activity will be presented with special emphasis on the relation of physicochemical properties to biological response.

810ABCD. Pharmaceutical Control and Analysis. 3 hours each. (Honigberg, Ruenitz, Stewart, Schramm, Thompson)
Lectures and laboratory instruction is devoted to separation, isolation and identification of drugs by chromatographic and spectroscopic methods.

811. Heterocyclic Medicinal Chemistry. 3 hours. (Blanton)
Prerequisite: CHM 544.
A course designed to the study of the chemical nature and behavior of the main nitrogen, oxygen and sulfur containing heterocyclic compounds of medicinal significance.

812. Mechanisms of Biological Degradations. 3 hours. (Stocklinski)
Lectures discussing the chemical mechanisms of biochemical transformations of small molecules. Attention will be focused on research reports on mammalian systems.

817. Synthesis of Natural Medicinal Agents. 3 hours. (Thompson)
Prerequisite: CHM 830A.
The chemistry of natural products of medicinal interest is stressed. Examples of syntheses from the recent research literature are used to illustrate the principles of designing complex organic syntheses. A novel synthetic problem is assigned as a term project.

818. Natural Products–Polymers in Medicinal Chemistry. 3 hours. (Honigberg)
Prerequisite: CHM 630-1-2 and PHR 809.
The determination of structure and the synthesis of biologically active natural polymers with special emphasis on peptides, polypeptides, and proteins.

823–824. Advanced Physical Pharmacy.
5 hours each. (Cadwallader, Capomacchia, Needham, Price, Vallner)
Discussion of advanced physical chemical methods as they apply to pharmaceutical problems and phenomena.

826. Pharmacokinetics. (Jun)
A study of the principles of kinetics of drug absorption, distribution and elimination, with emphasis on the design and evaluation of mathematical models.

827. Clinical Pharmacokinetics. (Cooper, Jun)
Prerequisite: PHR 635 or equivalent.
Clinical pharmacokinetics deals with clinical applications of pharmacokinetics in patient care. The aims of the course are to provide graduate students specializing in hospital pharmacy with a clear understanding of the fundamental pharmacokinetic concepts and their practical applications.

829. Drug Complexation. 3 hours. (Vallner)
Prerequisite: PHR 635 or equivalent.
This course applies principles of thermodynamics, equilibria and kinetics to the study of the mechanisms of drug-biomacromolecule interactions. The biomacromolecules include albumin, globulin, lippoprotein, tissue protein, enzymes and receptors, among others. Methods, including direct measurements, subtractive methods and electrostatic methods, for the study of drug or other small molecules and their interactions with macromolecules will be examined.

830. Radiation Principles in Pharmacy. 5 hours.
Two lectures and two 4-hour laboratories.
(Hamdy, Johnson, LaRocca)
Prerequisite: BCH 601 or equivalent.
Principles and techniques of radiochemistry and radiobiology as applied to pharmacy.

840. Physico-Chemical Principles of Drug Action. (Johnson, Wade)
Prerequisite: Consent of instructor.
A detailed study of the general principles governing drug absorption, distribution, metabolism and excretion.

841. Physico-Chemical Principals of Drug Action.
A study of the interrelationships between drug molecules and their physiologic receptors.

842. Cardiovascular Pharmacology. (Holl, Mokler)
Prerequisite: Consent of instructor.
A study of physiological control mechanisms of the mammalian cardiovascular system and how defects may lead to clinically identifiable disease states. Experimental approaches are evaluated and the actions of pharmacologically active agents are discussed.

843. Advanced Pharmacology. 4 hours.
Prerequisite: PHR 635.
A study of the actions and mechanisms of action of specific drugs at the molecular level, as reported in the recent literature.

844. Methods in Pharmacological Research. 5 hours. Three hours lectures and six hours laboratory.
Prerequisite: PHR 633 and STA 621 or equivalent.
A review of classical and biochemical methods used in evaluating compounds for their pharmacologic activity.

850. Problems in Pharmaceutical Marketing. (Kotzan)
Prerequisite: Graduate standing.
An in-depth examination of drug marketing experiences. Special emphasis is placed on the problems which arise in seeking a satisfactory relationship between the manufacturer, wholesaler, retailer, and the institutional sectors.

851. Seminar in Medical Care Programs. (Braucher, Jowdy)
Prerequisite: Graduate standing.
A comprehensive examination of the state of the nation's health, the distribution of health care facilities, and the various programs, both public and private, designed to improve the quality and distribution of health care throughout the United States. Emphasis will be placed on changes which are taking place in the delivery of medical services in the United States and how these changes related to the need for medical care.

853. Research in Pharmacy Administration. (Kotzan)
Prerequisite: Graduate standing, MKT 561, STA 621.
An intensive study of research and methods of research in pharmacy administration. The course includes the design, execution, and statistical analysis of experiments relating to physicians, pharmacists or drug comsumers.

930. Thesis. 5–50 hours.

PHILOSOPHY AND RELIGION

Bowman L. Clarke
(Peabody Hall, North campus)

PHILOSOPHY (PHY)

The department offers a comprehensive program, covering the major areas of philosophical study leading to the M.A. and the Ph.D. degrees. Various approaches, including historical studies, linguistic analysis, logical analysis, and phenomenology are represented by the faculty. Particular areas of study emphasized are epistemology, ethics, history of philosophy, logic, metaphysics, philosophy of education, philosophy of religion, philosophy of science, and political philosophy. Admission to the Ph.D. program presupposes a thorough background in the history of philosophy. The graduate program is designed to give the student a broad and thorough training in the basic areas of philosophy with a specialization in some field of particular interest to him. Admission is restricted so as to encourage a close student-faculty relationship. Preparation for teaching is considered an integral part of the Ph.D. program.

For the M.A. degree, reading knowledge of one foreign language is required; for the Ph.D., one foreign language is required and a second language and/or knowledge of areas cognate to philosophy may be required.

Unless otherwise stated, two senior division courses in philosophy are prerequisite to the following courses:

602. Existentialism. (Dauenhauer)
An examination of the development of existentialism beginning with Kierkegaard, influenced by Nietzsche, and continuing in the works of contemporary figures such as Jaspers, Sartre, Marcel, and Buber.

604. Classical American Philosophers. (Burton, Clarke)
Prerequisite: At least one course in philosophy other than 258.
A study of the major writings of C. S. Pierce, William James, and John Dewey and their influence on the development of contemporary philosophy.

605. Ethical Theory. (Blackstone, Granrose)
A study of the meaning and justification of fundamental ethical principles and concepts.

606. Social and Political Philosophy.
(Blackstone, Granrose)
Prerequisite: At least one course in philosophy other than 258.
Survey of such topics as the nature and function of society and the state, human freedom, and rights, and the bases of social and political obligations.

608. Philosophy of Religion. (Ayers, Blackstone, Clarke)
Prerequisite: Two senior division courses in philosophy or religion.
A critical study concerning the meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

611. (ART) Aesthetics. (Granrose)
A critical survey of philosophical theories about the arts (for example, painting, literature, and music). Attention will be given to such topics as the function of art in society and the problem of justifying aesthetic judgments.

614. (LIN) Introduction to Philosophy of Language (Nute, Severens)
Prerequisite: PHY 258.
Focuses upon such areas as ordinary language philosophy, meaning, uses of language, and truth. Attention will be given to both classical and contemporary figures.

616. Philosophy of Law. (Blackstone, Nemetz)
Prerequisite: 10 hours of philosophy, political science or law.
A study of the nature and function of law with emphasis on the interpretation and application of the law in the judicial process. Readings in classical and contemporary schools of the philosophy of law.

620. History of Philosophy, Ancient. (Harrison, Nemetz)
Prerequisite: PHY 104 or consent of instructor.
A course in the primary works of the great ancient philosophers, especially the writings of Plato and Aristotle.

621. History of Philosophy, Medieval. (Harrison, Nemetz)
Prerequisite: PHY 104 or consent of instructor.
Selected readings in the works of the great medieval philosophers, especially St. Thomas Aquinas and St. Augustine.

622. History of Philosophy, Modern. (O'Briant)
Prerequisite: PHY 104 or consent of instructor.
Traces the development of European philosophy up to the mid-19th century.

632. Philosophy and Literature. (Nemetz)
Prerequisite: At least one course in philosophy other than 258 or at least one course in English or foreign literature at the 200 level.
A study of the philosophic questions reflected in selected classics of world literature. Attention will also be given to the nature, functions and epistemic principles of the literary arts.

642. Set Theory and Logic. (Richards)
Prerequisite: PHY 258 or 10 hours of mathematics beyond MAT 100 or consent of instructor.
An introduction to the basic concepts of set theory, emphasizing the impact of the paradoxes of the infinite, Russell's paradox, and applications of set theory of the foundations of mathematics.

643. Symbolic Logic I.
Prerequisite: PHY 258 or consent of instructor.
A development of symbolic-mathematical logic, examining the propositional and predicate calculi with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

644. Symbolic Logic II. (Clarke, Richards)
Prerequisite: PHY 258 or consent of instructor.
An advanced course dealing with both traditional and modern methods in logic, especially the contributions of symbolic and mathematical logic.

650. Contemporary Philosophy. (Harrision, Nute, Severens)
Selected readings in important philosophers of the 19th and 20th centuries, including such thinkers as Nietzsche, Mill, Marx, Spencer, Bergson, James, Royce, Dewey, Whitehead, and Santayana. The program is left flexible to allow for divergent interests and needs of students and to permit consideration of significant current materials.

657, 658. History of Natural Science I, II. 5 hours each. (Kleiner)
Prerequisite: 10 hours of science.
An examination of major physical, biological, and cosmological theories and their philosophical import, 600 B.C. to the present.

659. Philosophy of Natural Science. (Burton, Harrison, Kleiner)
Prerequisite: Two senior division courses in philosophy or mathematics, including Philosophy 258.
The investigation of such topics as the logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific

explanation; and the ideas of prediction and control.

660. Metaphysics. (Burton, Clarke)
Prerequisite: At least one course in philosophy.
The problems of metaphysics and their relationship to other areas of philosophy.

661. Epistemology. (Nute, Severens)
Prerequisite: At least one course in philosophy.
The problems of epistemology and their relationship to other areas of philosophy.

671. Philosophy of Social Science. (Burton, Harrison)
A study of the methods and problems of inductive reasoning, including the nature of probable inference, tehcniques of verification, and the structure of scientific explanations, with special reference to the social sciences.

674. (PSY) Philosophy of Mind. (Burton, Harrison)
Prerequisite: At least one course in psychology or a related field.
A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psycho-analytic, the phenomenological, with particular attention to such problematic areas as the nature, and validation of psychological concepts, laws, and theories, and knowledge of other minds.

693M. (HIS) Philosophy of History.
Prerequisite: 10 hours in philosophy or history or cognate subject-area.
An introduction to both classical and modern views on the nature of history. Consideration will be given to the analysis of the conceptual foundations of historical methods, theories of explanation, the problem of historical objectivity, and the purpose of history and its relation to other disciplines.

800, 801, 802. Philosophical Systems of Plato, Artistotle, and the Middle Ages. 5 hours each. (Nemetz)
Prerequisite: At least three courses in philosophy.
A study of the philosophical systems of the classical premodern philosophers. 800 deals with the thought of Plato, 801 with Aristotle and 802 with the Middle Ages.

803. Philosophy of Education. (Heslep, Newsome)
A critical examination of philosophical questions concerning education.

808. Seminar in Philosophy of Religion. (Blackstone and Clarke)
A critical study of major topics in the philosophy of religion such as the nature and existence of God, the problem of evil, and the character of religious discourse.

810, 811, 812. Philosophical Systems of Continental Rationalism, British Empiricism, and Kant. 5 hours each. (Blackstone, Burton, O'Briant)
Prerequisite: At least three courses in philosophy.
A study of the philosophical systems of the classical modern philosophers. 810 deals with Continental rationalism, 811 with British empiricism, and 812 with Kant.

814ABC. Recent and Contemporary Philosophy. 5 hours each.
Prerequisite: At least three courses in philosophy.
A critical study of recent and contemporary philosphical positions such as logical empiricism, pragmatism, analysis, Marxism and existentialism.

819. Seminar in the Philosophy of Language. (Nute, Severens)
A critical study of the original sources dealing with such topics as formal and ordinary languages, meaning, reference, descriptions, truth, definition, analyticity, speech acts, and the uses of language.

820ABC. Seminar in History of Philosophy. 5 hours each.
Prerequisite: 10 hours of advanced work in philosophy or consent of instructor.
A study of philosophical topics and problems as found in the works of ancient, medieval, and modern philosophers.

830ABC. Seminar in Political Philosophy. 5 hours each. (Blackstone)
Prerequisite: 10 hours of advanced work in philosophy or consent of instructor.
A critical analysis of problems and topics in classical and contemporary political philosophy.

840ABC. Seminar in Ethics. 5 hours each. (Blackstone, Granrose)
A critical analysis of problems and topics in classical and contemporary moral philosophy.

849ABC. Seminar in Problems of Logic. 5 hours each. (Clarke, Richards)
Prerequisite: PHY 443/643 or its equivalent.
An investigation into some of the major problems in contemporary logic, such as semiotics, deductive systems, metamathematics and the problems of induction.

859. Seminar in Philosophy of Science. (Kleiner)
Prerequisite: PHY 443/643 or its equivalent.
A critical study of basic concepts in science such as explanation, description, prediction, law,

cause, theory, confirmation, probability, observation and measurement.

860ABC. Seminar in Metaphysics and Epistemology. 5 hours each.
Prerequisite: 10 hours of advanced work in philosophy or consent of instructor.
A critical study of various metaphysical systems and theories of knowledge and related problems in these areas.

870ABC. Problems and Topics in Philosophy. 5 hours each.
Prerequisite: 10 hours of advanced work in philosophy or consent of instructor.
A systematic study of philosophical positions and problems.

880ABC. Readings and Research in Special Problems in Philosophy. 5 hours each.
Prerequisite: 10 hours of advanced work in philosophy or consent of instructor.
Directed reading and research in philosophy in area(s) of a student's special interest.

930. Thesis. 5–50 hours.

RELIGION (REL)

Ten hours in religion or a cognate subject-area or consent of instructor is prerequisite for the following courses:

600. History of Religions. (Ayers, Ratnayaka)
A survey of the nature of early and primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

601. Religion in Asian Cultures. (Ratnayaka)
A study of Asian religions in their cultural context. Examines the traditional patterns of interaction between religion and culture and the effect of contemporary developments like secularism and nationalism.

604. The Buddhist Tradition. (Ratnayaka)
Traces the development of Buddhism from its origins in the life and teachings of the Buddha through the period of philosophical ferment in India to present day thought and institutions in Asia.

608. Philosophy of Religion. (Ayers, Blackstone, Clarke)
Prerequisite: Two senior division courses in philosophy or religion.
A critical study concerning the meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

609. Indian Philosophy and Religion. (Ratnayaka)
Traces India's religious and philosophical thought from the Indus civilization to the present. A study of orthodox Hindu systems, Jainism, Buddhism, and related religious practices and ethics.

610. Old Testament Literature. (Ayers)
A study of the nature, content and problems of Old Testament literature, with particular attention given to historical data, literary forms, and outstanding personalities.

611. New Testament Literature. (Ayers, Howard)
A study of the nature, content and problems of New Testament literature, with particular attention given to the political, social and religious background of Judaism out of which Christianity sprang, the life of Jesus, the immediate foreground of an expanding church.

612. The New Testament World.
Prerequisite: At least 10 hours of history and/or literature.
A study of the political, social, and religious influence on the New Testament writings. Special attention is given to Intertestamental Judaism and Hellenistic and Roman Religion as backgrounds to New Testament Christianity.

620. Constructive Theology. (Ayers, Power)
An examination of the aims, methods, and content of theology as related to monotheistic religions.

621. Contemporary Theology. (Ayers, Power)
An examination of the theories of contemporary theologians concerning such problems as religious language, God, cosmology, human history, revelation, faith, and eschatology. Writings from monotheistic religions will be investigated.

622. Theology and Culture. (Ayers, Power)
An examination of the relation of theology to philosophy, sience, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture.

630. Personalities of the Old Testament. (Ayers)
A study of the development of Hebrew religion from its early, more primitive stages to the high point attained in the social, ethical, and spiritual teachings of the great writing prophets of Israel.

640. The Teachings of Jesus. (Ayers)
Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

650. Judaism. (Howard)
A study of Judaism from the post-Biblical period to the present with emphasis upon the history and literature of the formative years.

660. Life and Letters of Paul. (Ayers, Howard)
An historical-exegetical study of the life and letters, the relation between Acts and the Pauline epistles, early non-Pauline Christianity, Pauline theology, and its lasting impression on Christianity.

ARAMAIC/SYRIAC (ARA)

602. Introduction to Aramaic/Syriac. (Howard)
Prerequisite: HBW 204.
A study of the elements of Aramaic/Syriac especially as related to Hebrew. Simple readings from religious texts.

603. Advanced Readings From Religious Aramaic/Syriac Texts. (Howard)
Prerequisite: ARA 602.
Readings from the Bible, the Dead Sea Scrolls, early rabbinic literature, the ancient Peshitta translation of the Bible and early patristic writings in Syriac.

PHYSICS (PCS) AND ASTRONOMY (AST)

J. H. Henkel
(Physics Building, South Campus)

Doctoral language requirement: one foreign language in depth.

The Department of Physics and Astronomy offers graduate work leading to the M.S. and Ph.D. degrees in physics. The major research in the department is conducted in the following fields: atomic and molecular physics, nuclear physics, solid state physics, optics, relativity, high energy physics, and low temperature physics. Experimental research is conducted in on-campus laboratories for nuclear physics, atomic and molecular physics, low temperature physics, and solid state physics. In addition to these, the experimental facilities at the Oak Ridge National Laboratory and the Indiana University Cyclotron Facility are available and are used quite frequently. Research in the above areas is aided by the facilities of the Computer Center.

Prospective students desiring financial aid should submit all application material by February 15.

PHYSICS (PCS)

600. Physics Seminar. 1 hour. Two hours per week.
Required of all graduate students in physics.
Discussion of various topics in the field of physics.

604–605. Theoretical Mechanics. 4 hours each.
Prerequisite for 604: PCS 239 and MAT 358.
These courses develop within the framework of Newtonian principles: statics, kinematics and dynamics of a particle and of systems of particles, mechanics of continuous media, and Lagrange's equations.

609. Intermediate Mechanics. 5 hours. Four lectures and three hours laboratory.
Prerequisite: PCS 229 or 239, MAT 255; corequisite: MAT 358.
Kinematics and dynamics of particles and rigid bodies, conservation theorems, and small oscillations. Recommended for scientists and teachers who need an introduction to mechanics at the introductory calculus level.

620–621. Electricity and Magnetism. 4 hours each.
Prerequisite for 620: PCS 239 (229) and MAT 459 or PCS 604.
Beginning with the experimentally determined laws of Coulomb, Ampere, Biot-Savart, Faraday, and others the fundamental methods of Gauss and Stokes will be applied to develop logically the theory as embodied in Maxwell's equations.

624–625. Electronics and Electrical Aids to Measurements. 4 hours each. Four lectures and one 2-hour laboratory.
Prerequisite: PCS 229 or 239, MAT 254.
These courses are a study of circuit theory, basic electronic devices, amplifiers, feedback, pulse, and digital circuits.

627. Basic Electronics for Scientists. (Wood)
Prerequisite: PCS 128 or consent of instructor.
This one quarter course will offer practical instruction in electronics for the scientist. The basic operation of vacuum tubes and transistors will be discussed, but the major emphasis of the course will be on understanding the operation of digital and analog circuits used by scientists in their experimental work. Laboratory work forms an important part of the course. The course is a service course and not intended for physics students.

629. Intermediate Electricity and Magnetism. 5 hours. Four lectures and three hours laboratory.
Prerequisite: PCS 229 or 239 and MAT 255.
Experimental laws will be studied and used to develop electromagnetic theory, including circuit theory, and modern electrical measurements will be made in the laboratory. Recommended for scientists and teachers who need an introduction to electricity and magnetism at the introductory calculus level.

630. Thermodynamics and Kinetic Theory. 4 hours.
Prerequisite: PCS 239 (229) and MAT 358.
This course is a study of the laws of thermodynamics and their application to the fundamental concepts of physics.

631. Kinetic Theory and Statistical Mechanics. 4 hours.
Prerequisite: PCS 604 and 630.
This course is an introduction to the study of statistical mechanics and its application to the study of gases.

635. (BCH/BIO) Molecular Biophysics.
Prerequisite: BIO 102, CHM 240 or 340 and/or consent of instructor.
A selection of various topics of current interest in biophysics to include molecular spectroscopy and photobiology. Properties of macromolecules, analysis of electrical activity of nerves and muscles, introduction to theoretical biology, biological systems, membranes and genetics.

640. Classical Theoretical Physics. 4 hours.
Prerequisite: PCS 604 and 620.
Methods of problem solving and formal developments in mechanics to the formulation of Lagrange and Hamilton. Applications of Maxwell's equations.

650. Atomic Physics and Quantum Mechanics I. 4 hours.
Prerequisite: PCS 604 and 620.
Development of wave mechanics with applications to atomic structure.

651. Atomic Physics and Quantum Mechanics II. 4 hours.
Prerequisite: PCS 650.
Development of wave mechanics with applications to atomic and molecular structure.

659. Introduction to Atomic and Molecular Physics. 5 hours. Four lectures and three hours laboratory.
Prerequisite: PCS 609 and MAT 255
Includes atomic and molecular spectra, quantum phenomena and relativity. Recommended for scientists and teachers who desire an introduction to modern physics.

665, 666, 667. Experimental Phsyics. 3 hours each. Eight hours laboratory.
Prerequisite: PCS 650.
Laboratory courses in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

672. Nuclear Structure. 4 hours.
Prerequisite: PCS 650.
These courses are designed to introduce the student to the theory of nuclear structure as it has been inferred from quantum mechanical considerations and the study of experimental data on radioactivity and nuclear reactions.

679. Introduction to Nuclear and Solid State Physics. 5 hours. Four lectures and three hours laboratory.
Prerequisite: MAT 255, PCS 659.
An introduction to physics of nuclei, elementary particles, and the solid state. Recommended for scientists and teachers who desire an introduction to nuclear and solid state physics.

682. Solid State Physics. 4 hours.
Prerequisite: PCS 604, PCS 630 desirable.
These courses are a study of the elastic, electrical, magnetic, and thermal properties of solids and cover such topics as: crystal structure, X-ray and neutron diffraction, elasticity, crystal imperfections, thermal and electrical conduction, spin resonance, the photoelectric effect, and band theory.

727. Mechanics for Teachers. 5 hours. Four lectures and one 2-hour laboratory period.
Prerequisite: MAT 101.
This course is designed to aid the elementary physics teacher in dealing with problems in mechanics which may arise in his teaching. The effective presentation of physical concepts in this area will be emphasized. For credit toward Master of Education degree only.

728. Waves, Electricity and Magnetism. 5 hours. Four lectures and one 2-hour laboratory period.
Prerequisite: 15 hours of physics.
This course is designed to aid the elementary physics teacher in dealing with problems in waves, electricity and magnetism which may arise in his teaching. The effective presentation of physical concepts in these areas will be emphasized. For credit toward Master of Education degree only.

729. Modern Physics. 5 hours. Four lectures and one 2-hour laboratory period.
Prerequisite: 15 hours of Physics.
This course is designed to aid the elementary physics teacher in dealing with problems in modern physics which arise in his teaching. The effective presentation of physical concepts in these areas will be emphasized. For credit toward Master of Education degree only.

801, 802, 803. Advanced Analytical Mechanics. 5 hours each. Three hours recitation per week.
Prerequisite for 801: PCS 604.
Systems of particles, D'Alembert's principle, principle of least action, Hamilton's principle, generalized coordinates, Poisson brackets, and the Hamilton-Jacobi equation.

810, 811, 812. Quantum Mechanics. 5 hours each. Three hours recitation per week.
Prerequisite for 810: PCS 640 and 803.
Basic principles of quantum theory, wave mechanics, and the application of these principles to problems in modern physics.

815–816. Advanced Quantum Theory. 5 hours each. Three hours recitation per week.
Prerequisite: PCS 812 and 822.
Relativistic quantum mechanics and quantum field theory.

820, 821, 822. Advanced Electromagnetic Theory. 5 hours each. Three hours recitation per week.
Prerequisite for 820: PCS 640.
Maxwell's equations are assumed initially and used to investigate classical electromagnetic phenomena. A formulation of the field equations is developed in a space-time continuum. Beginning with the static phenomena the study will include the theory of multipoles, the radiation and propagation of electromagnetic waves, and the related reflection, refraction, diffraction and dispersion phenomena.

830, 831. Statistical Mechanics. 5 hours each. Three hours recitation per week.
Prerequisite for 830: PCS 812.
A study of the basic theory of statistical mechanics and its applications to the solution of some fundamental problems in physics.

840, 841, 842. Methods of Theoretical Physics. 5 hours each. Three hours recitation per week.
Prerequisite for 840: MAT 358.
Treatment of theoretical problems in physics (mechanics, electromagnetism, wave mechanics, heat flow, acoustics, etc.) by means of differential and integral equations, Green's functions, vector and tensor analysis, and perturbative, variational and group theoretical methods, and algebra and group theory.

850, 851. Molecular Spectra and Structure of Diatomic and Polyatomic Molecules. 5 hours each. Three hours recitation per week.
Prerequisite for 850: PCS 650; 810.
A study of the structure of molecules as may be determined from their rotational, vibrational, and electronic spectra. The theory of molecular spectra will be presented for diatomic and selected polyatomic molecules.

873, 874. Nuclear Theory. 5 hours each. Three hours recitation per week.
Prerequisite for 873: PCS 672 and 812.
A course in advanced nuclear theory. Some of the topics covered are multipole radiations, polarization phenomena, resonance theory, and nuclear scattering phenomena.

882, 883, 884. Advanced Solid State Physics. 5 hours each. Three hours recitation per week.
Prerequisite for 882. PCS 682 and 810.
A discussion of the quantum theory of solids.

890, 891, 892. Advanced Topics. 5 hours each. Three hours recitation per week.
Prerequisite for 890: PCS 810.
This course consists of current and advanced topics in physics.

930. Thesis. 5–50 hours.

ASTRONOMY (AST)

791. Astronomy for Teachers. 5 hours. Four lectures and two hours laboratory.
Prerequisite: 10 hours of physics or 20 hours of physical sciences.
Discussion, lectures, and laboratory exercises focused on the problems that are involved in science teaching in the secondary schools relative to astronomical concepts and procedures. For credit toward Master of Education degree only.

PHYSIOLOGY AND PHARMACOLOGY (VPH)

Dennis D. Goetsch
(Veterinary Building, South Campus)

Doctoral language requirement: one language.

Candidates for the Master of Science and Doctor of Philosophy in physiology or pharmacology must have a Bachelor of Science or a Doctor of Veterinary Medicine degree from a college or university approved by The University of Georgia. Research opportunities are offered in neurophysiology and neuropharmacology, sensory physiology and bioelectronics, digestive physiology and metabolism, endocrinology and reproductive physiology, renal physiology, and cardiopulmonary physiology and pharmacology.

Certain minimum requirements in addition to those required by the Graduate School must be met. For the Doctor of Philosophy degree, any undergraduate deficiencies in biological sciences, chemistry, mathematics, or physics must be made up.

605. Animal Physiological Chemistry. (Finco)
Prerequisite: Permission of instructor. Fall quarter.
Integrated functional aspects of the metabolic, respiratory and transport systems of the animal body from a chemical standpoint.

606. Comparative Mammalian Physiology.
5 hours. Four lectures and one 3-hour laboratory.
Prerequisite: Permission of instructor. Winter quarter.
A presentation of the animal body including study of the cell, body fluids, nervous system and the heart and circulation.

607. Comparative Mammalian Physiology.
5 hours. Four lectures and one 3-hour laboratory.
Prerequisite: Permission of instructor. Spring quarter.
A continuation of 606 including the alimentary tract, kidneys and respiration.

608. Comparative Mammalian Physiology. 5 hours. Four lectures and one 3-hour laboratory. (Thompson)
Prerequisite: Permission of instructor. Fall quarter.
A continuation of 607 including endocrinology and reproduction.

630. Veterinary Medical Pharmacology. (Crawford)
Prerequisite: Permission of instructor.
Pharmocodynamics emphasizing drug effect at the cellular level. (Winter quarter.)

631. Veterinary Medical Pharmacology. 5 hours. Four lectures and one 3-hour laboratory. (Booth)
Prerequisite: Permission of instructor. Spring quarter.
Basic concepts of drug interactions with biological systems and their applications to clinical pharmacology.

635. Problems in Clinical Pharmacology. 3–10 hours. (Bowen)
Prerequisite: Permission of instructor.
Intensive study of a specific approved problem in pharmacology.

636. Clinical Pharmacology Seminar. 1 hour. Max. 2 hours. (Bowen)
Prerequisite: VPH 630 or equivalent.
A seminar designed to investigate the application of current knowledge of basic pharmacologic principles to problems arising from the therapeutic uses of drugs.

806. Advanced Physiology.
Prerequisite: VPH 606 or equivalent.
Advanced study of current concepts of physiology, with emphasis on respiration and digestion. (Summer quarter of odd years.)

807. Advanced Physiology.
Prerequisite: VPH 606 or equivalent.
Advanced study of current concepts of physiology, with emphasis on the renal and cardiovascular systems. (Summer quarter of even years.)

808. Ruminant Physiology. 5 hours. Three lectures and one 4-hour laboratory. (Hubert)
Prerequisite: Permission of instructor.
The physiological, biochemical and microbiological processes of digestion, absorption and metabolism of absorbed nutrients. (Fall quarter.)

809. Physiology of Gametes.
Prerequisite: Permission of instructor.
Advanced study of gonad function, sperm and ova physiology, fertility and fertilization. (Fall quarter.)

810. Comparative Medical Endocrinology.
Prerequisite: VPH 608, ZOO 827 or equivalent.
Structure and function of endocrine glands and hormones with emphasis on the evaluation of the function of endocrine systems. (Winter quarter.)

811. Problems in Endocrinology. 2–10 hours.
Prerequisite: 810 or equivalent.
Intensive study of an approved experimental problem in endocrinology.

840. Neurophysiology. 5 hours. Four lectures and one laboratory period. (Bowen)
Prerequisite: Permission of instructor. Fall quarter of odd years.
A comprehensive study of the nervous system, stressing biophysics, clinical neurology and pharmacology.

842. Molecular Pharmacology. (Booth)
Prerequisite: Permission of instructor.
A study of drug action at the molecular level. Computer assisted study.

845. Chemotherapy. 3 hours. (Bowen)
Prerequisite: Permission of instructor.
Current research and reviews of classical research in the field of chemotherapy. Consideration will be given to anti-cancer, bacterial, and viral chemotherapy. (Spring quarter of even years.)

890. Physiology Seminar. 1 hour.
Presentation of current research findings and methodology in physiology.

900. Problems in Physiology. 2–15 hours.
Intensive study of an approved experimental problem in physiology.

930. Thesis. 5–50 hours.

PLANT PATHOLOGY AND PLANT GENETICS

W. N. Garrett
(Miller Plant Sciences Building, South Campus)

Plant Pathology and Plant Genetics offers three graduate programs: M.S., Ph.D. and a professional Master of Plant Protection and Pest Management degree (M.P.P.P.M.). The department has a strong tradition in scholarship in the area of mycology and has an international reputation for research on diseases of apples, cotton, cowpeas, forest trees, peaches, and peanuts. Currently, active research and teaching programs are being conducted in all major areas of plant pathology involving many different crops.

The M.S. and Ph.D. degrees are traditional academic degree programs which demand creative scholarship, technologic skill, and philosophic soundness. These programs emphasize the development of scientists who have the ability to fill positions of leadership in teaching, research, and administration. To achieve such goals of excellence, the student must be highly motivated and must make a commitment to the understanding of plant pathology so that biological principles can be developed and applied. Students may major in plant pathology, mycology, or genetics. Plant pathology majors may emphasize general pathology or specialize in bacteriology, nematology, virology, or physiology of disease. Mycology majors specialize in morphology, taxonomy, or physiology of fungi. Genetics majors specialize in genetics of fungi or physiological genetics.

The M.P.P.P.M. program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and agronomy. Details of this program may be found on page 33. The department is housed in a new building and is well-equipped with modern instrumentation, greenhouses, and other facilities required for graduate research. A Plant Disease Clinic operated by the Extension Plant Pathology Department is used to give students practical training in disease diagnosis and control.

Prospective students who are interested in financial aid should file an application with the department; they will be considered for any Graduate School, College of Agriculture, or department assistantship for which they are eligible.

GENETICS (GEN)

601. Plant Genetics. 5 hours. Four lectures and one laboratory period. (Fleming)
Advanced genetic principles from coding to the genetics of sterility and disease resistance, cytoplasmic inheritance, polyploidy, apomixis and mutations. (Winter Quarter.)

602. Plant Breeding. 5 hours. Four lectures and one laboratory period. (Fleming)
Fundamental methods utilized in the science of plant breeding and the important role that breeding plays in crop and tree improvement. (Spring quarter.)

604. Physiological Genetics. (Papa)
Prerequisite: CHM 240 or BCH 301 or the equivalent.
The biochemical basis of heredity; mechanisms of gene action, function and structure of the gene, mutations, and agents of metabolic control. (Fall quarter.)

810. Research in Plant Genetics (Fleming)
Prerequisite: Permission of instructor.
Prosecution of a special problem in plant genetics with parallel reading and conferences with the instructor.

812. Specialized Plant Breeding.
Prerequisite: GEN 402.
Lectures and laboratory periods in the field on practices and techniques used in the development of crop varieties and hybrids. Will be offered Summer Quarter 1975 and alternate years thereafter. Course expands into Fall Quarter.

815. Advanced Plant Pathology and Plant Genetics Seminar. 1 hour. Max. 6 hours.
Presentation of papers and discussion of research in plant pathology and genetics. (Fall, winter, and spring quarters.)

930. Thesis. 1–15 hours.

PLANT PATHOLOGY (PAT)

613AB. (AGY, ENT, HOR) Internship in Crop Protection and Pest Management. 1 hour each.
Prerequisite: Must be enrolled in professional Master's Plant Protection and Pest Management degree program. (See course description in Agronomy section)

620. Introductory Mycology. 5 hours. Three lectures and two laboratory periods. (Hanlin, Fuller)
An introduction to the biology of the fungi, including a survey of all classes. (Fall and Spring quarters.)

623. Plant Virology. 5 hours. Three lectures and two laboratory periods. (Kuhn)
The nature of plant viruses, their identification, host relations, transmission, purification, serology, and control. (Spring quarter of even years.)

625. Plant Nematology. 5 hours. Three lectures and two laboratory periods. (Powell)
Morphology and taxonomy of plant parasitic nematodes, with emphasis on characters used in identification. (Winter quarter.)

628. Diagnosis and Control of Plant Disease. 5 hours. Three lectures and two laboratory periods. (Hendrix)
Prerequisite: Permission of instructor.
Development of fundamental practical knowledge for identification and control of plant diseases. (Fall quarter.)

629. Bacterial Plant Pathogens. 5 hours. Three lectures and two laboratory periods. (McCarter)
The plant pathogenic bacteria, their isolation, identification, inoculation and control. (Winter quarter of odd years.)

630. Integrated Plant Pest Management. 3 hours. (Powell)
Prerequisite: PAT 353, ENT 374, 477, AGY 434, or permission of instructor.
Integrates principles used in the control of various plant pests into a logical system of application. (Spring quarter.)

800, 801. Research in Plant Pathology. 5 hours each.
Prerequisite: Permission of departmental head or graduate coordinator.
Prosecution of a special problem in plant pathology with parallel reading and conferences with the instructor.

806. Etiology of Plant Diseases. 5 hours. Three lectures and two laboratory periods. (Hussey, Kuhn, McCarter.)
Prerequisite: Permission of instructor.
A study of the non-mycological causes of infectious diseases of higher plants, with special reference to the biological characteristics and phytopathogenic mechanisms of bacteria, nematodes, and visuses. (Winter quarter.)

815. Advanced Plant Pathology and Plant Genetics Seminar. 1 hour. Max. 6 hours.
Presentation of papers and discussion of research in plant pathology and genetics. (Fall, winter, spring quarters.)

820. Field Mycology.
Prerequisite: PAT 420/620.
This course is designed to provide students with training in the collection and identification of fungi in their natural habitats. Specimens collected in the field will be brought into the laboratory and identified using current taxonomic literature. Instruction will also be given in the various methods of preserving fungi.

821. (BOT) Biology of Ascomycetes. 5 hours. Three lectures and two laboratory periods. (Hanlin)
A study of the comparative morphology of the Ascomycetes and their conidial stages (Fungi imperfecti), principles of taxonomy, and training in identification. (Spring quarter of odd years.)

822. Phytopathology: Principles and Theory. (Luttrell)
A consideration of the theoretical aspects of plant pathology designed to integrate the various subsciences in this field and to arrive at basic principles. (Winter quarter of even years.)

824. (BOT) Biochemical Techniques for Biologists. Laboratory only. (Wynn, Kochert)
Prerequisite: BCH 601 or 801 or permission of instructor.
A laboratory course in biochemical methods important in biological research. Emphasis is placed on quantitation of biologically important compounds, use of radioisotopes, and purification of nucleic acids and enzymes. Experimental design, the handling of data, and technical theory are integral parts of the laboratory work. (Winter quarter.)

827. Biology of Plant Parasitic Nematodes. 5 hours. Three lectures and two laboratory periods. (Hussey)
Prerequisite: PAT 625 or permission of instructor.
A study of the biology, physiology and ecology of plant parasitic nematodes with special reference to phytopathogenic mechanisms, host responses to infection and nematode physiology. (Winter quarter.)

830. (ENT, PAR, PS, ZOO) Seminar in Parasitology. 1 hour. Max. 6 hours.
Prerequisite: Permission of instructor.

Weekly meeting devoted to discussions of parasitological subjects. (Fall, winter, spring quarters.)

832. (BOT) Biology of Phycomycetes. (Porter, Porter)

833. (BOT) Biology of Basidiomycetes. (Hanlin, Porter.)

930. Thesis. 1–15 hours.

POLITICAL SCIENCE (POL)

Loren Beth
(Baldwin Hall, North Campus)

Doctoral language requirement: one language, and a second language or proficiency in use of a research tool to be determined by the department.

The Department of Political Science offers programs leading to M.A., M.P.A., D.P.A. and Ph.D. degrees. At the Ph.D. level the department offers six fields of study, plus a variety of specialized curricula. The candidate selects three fields of study.

The Masters of Public Administration is designed for those persons planning to enter, or who are already a part of, the public service. Further details of the program may be found on page 34. Also, further details on the DPA program may be found on page 37.

All degree programs are increasingly oriented to the systematic study and analysis of political phenomena.

Prerequisites for the following courses are Political Science 101, or its equivalent, and two senior division courses in political science, history, or economics.

601. Political Philosophy: Plato to Machiavelli. Analysis of selected works of such writers as Plato, Aristotle, Cicero, St. Augustine, and St. Thomas, concluding with the rejection of classical thought by Machiavelli.

602. Political Philosophy: Hobbes to Nietzsche. A study of the development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

603A. Contemporary Political Theory.
An analysis of the most prominent conceptual framework in contemporary political science. The specific frameworks to be examined are power, systems analysis, conflict, integration, and structural functionalism. The theories will be examined in terms of their precision and rigor as well as their empirical applicability and relevance.

603B. Contemporary Empirical Political Theory. (see 603A above)

605. The Constitution of Georgia.
An historical survey of the evolution of the Constitution of Georgia followed by a detailed study of the present constitution through decisions and opinions of the Supreme Court of Georgia.

608. Problems in Democratic Theory.
A study of major problems that arise in theoretical discussions of democracy, such as the nature of democratic government, its purposes, its justification, its limitations, and the conditions necessary for its maintenance.

609. Contemporary Political Thought.
A study of major issues in twentieth-century political thought. Attention will given also to the theoretical roots of major contemporary ideologies.

610. American Political Parties.
A study of party organization and the role of parties in political systems.

611. The Electoral Process.
An examination of the factors which contribute to an electoral choice. Both psychological and sociological influences are considered.

613. Government and Interest Groups.
A study of the major organized agrarian, labor, business, professional and other special interest groups that regularly participate in the formation of public policy.

614. The Legislative Process.
A study of the structure, functions, and behavior of local, state, and national legislative bodies with emphasis on composition, leadership, procedures, party and interest group roles, constituency influence, and representation theory.

616. Political Socialization and Recruitment.
A survey of the literature directed toward an understanding of the development of political attitudes in both mass public and elites, including American and non-American systems.

617. Urban Politics.
A comprehensive study of the organization and operation of city and county governments in the United States. Considerable attention will be given to the political aspects of these governments and to techniques of citizen participation. Students will become familiar with the actual workings of city and county governments in Georgia through field trips and field studies.

618.State Government.
A study of the organization, functions, and the operation of state government in the United States with particular emphasis on policy formulation and outputs in the states.

619. Politics of Race.
An in-depth survey of the major political responses on the part of minority racial groups in the U.S. to conditions of deprivation and inequality. The course considers the integrationist-assimilationist movements, including material on electoral politics, black nationalist and separatist movements, and rebellions. These movements are looked at from a broad historical perspective. The conditions which give rise to them are also considered in some depth.

620. Approaches to International Relations.
An introduction to the main approaches to the study of international relations; systems analysis; power analysis; decision-making analysis; and game theory.

621. International Organization.
A study of the fundamental principles of international political organization plus a study of proposals and attempts toward a politically organized world. Special emphasis is given to the United Nations.

622. International Legal Process.
Readings, lectures and research on the functioning of the legal structures in the international political process with special emphasis on the relations between politics and the law.

625. American Foreign Policy.
A study of both the domestic and international source, content, and consequences of United States' efforts either to influence or adopt itself to other states' behavior.

626. International Conflict.
Prerequisite: POL 620.
An introductory study of the source, types and resolutions of international conflict situations. Special attention is devoted to the study of crisis, intervention, and war.

630. Western European Political Systems.
Politics and process in Western European political systems. Emphasis will be focused on comparative analysis with examples drawn from the full range of European parliamentary democracies.

631. Social Change and Political Development.
A systematic examination of the factors that account for the movement of nations from underdeveloped to developed status.

632. Major Communist Political Systems.
An analysis of political processes, ideology, and change in the USSR, Yugoslavia, and mainland China. Comparative analysis will be made of the nature of these systems for and understanding of contemporary communism.

633. Comparative Eastern European Political Systems.
A comparative analysis of the political systems of Eastern Europe (excluding the USSR). While emphasis is placed on post-1944 developments, attention is given to the constitutional and political system between the world wars.

634. Latin American Political Systems.
A comparative analysis of the political systems of Central and South America with emphasis on the concepts of political stability, conflict, revolution, economic development and modernization.

637. The Politics of Violence.
A comparative examination of political violence in various forms such as revolution, revolt, riot, demonstration, terrorism, and coup d'etat. Violence is related to political, historical, socio-economic, and psycho-cultural factors.

638. Contemporary African Politics.
A structural-functional analysis of the new African states with special emphasis on sub-Saharan Africa.

639. Far Eastern Political Systems.
A study of social structure, political culture, and political dynamics of the Far Eastern systems with emphasis on China, Japan, and Korea.

641. Principles of Public Administration.
A study of administrative organization, relationships, and controls in the United States with emphasis on national public administration. Emphasis is given to current research in organization, personnel, and budgeting.

642. Public Personnel Administration.
A study of public personnel systems in the U.S. with major concentration on the national civil service system. Special emphasis is given to current research in the areas of leadership, informal organization, motivation, and small group theory.

643. Public Financial Administration.
A study of the budgeting process, preparation and enactment of the budget, financial accountability and the audit.

644. Government and Business.
Economic bases and guidelines for government, intervention; the policy of maintaining competition; role of anti-trust policy in a private enterprise economy; character and limitations of the law.

645. Comparative Administration.
A study of the administrative systems of both developed and underdeveloped states with particular emphasis on how the general culture of a state affects its administration. Attention given to Western Europe, the Near East, and the Far East.

646. Government Organization and Administration Theory.
A systematic analysis of theories of organization, management and administration. Special consideration will be given to institutional, behavioral, and psychological theories.

647. The Law Enforcement Process.
Introduction to the cultural, psychological, political and legal perspectives of law enforcement, with emphasis on theories of control of deviant behavior through law. Theoretical focus will prepare students for understanding current problems of law enforcement.

648. Law Enforcement Administration.
Prerequisite: POL 647.
A critical examination of the current operation of legal institutions, with emphasis on policy, criminal courts, and rehabilitative agencies.

649. Personnel Problems in Public Agencies.
Provides in-depth treatment of selected problems in public personnel administration, using case studies and other vehicles to simulate realistic situations encountered in public agencies.

651. Policy Analysis.
Prerequisite: Minimum of two graduate courses.
An analysis of major policy decisions, in the areas of civil rights, welfare, and regulation of the economy, focusing on their impact on the environment and the political system. Also studies in the discrepancy between policy outputs and political outcomes.

652. The Executive Function in Political Systems.
A survey of the organization, functions, and actions of the American presidency, state governorships, and of city majors.

669. Urban Affairs and Problems.
Local governments within urbanized and metropolitan areas will be studied as components of the total political system. Emphasis will be placed on the problems generated by an urbanized society and the various solutions utilized.

671. Federalism-Intergovernmental Relations.
The American federal system will be studied as it provides a framework for the total political system. Emphasis is placed on theoretical and empirical analysis on intergovernmental relations within the United States as compared to other federalist countries.

683. American Constitutional Law.
A study of the fundamental principles of con-

stitutional interpretation and practice in the United States through decisions and opinions of the Supreme Court.

684. American Constitutional Law.
A continuation of Political Science 683 with emphasis on recent Supreme Court decisions.

688. Judicial Behavior and Modern Jurisprudence.
The court system will be studied as a component of the total political system. Emphasis is placed on theoretical and statistical approaches to the study of American and foreign courts.

689. Administrative Law.
This course stresses the legal principles and practical doctrines involved in the work of administrative tribunals, vested with quasi-legislative or quasi-judicial powers, or both.

691. American Government and Politics Seminar.

694. Seminar in Comparative Government.
An introduction to the study of comparative politices designed for the student offering comparative political studies as a field of concentration.

701. Methodology in Political Science.
An examination of basic scientific methods, broadly defined, to include problems of definition, concept formation, hypothesis testing, explanation and prediction, and theory construction.

702. Political Research Design and Data Analysis.
Prerequisite: Graduate standing or consent of instructor. A critical analysis of research problems in political science which are susceptible to the use of quantitative techniques.

803. Interdisciplinary Theory in Political Science.
Prerequisite: POL 701 or permission of the instructor.
This course highlights the contributions made to the study of human behavior in politics by theoretical approaches developed in the other behavioral and social sciences. Particular attention is given (1) role theory, (2) personality theory, (3) psychology of adjustments, (4) the attitude change literature, (5) utility-maximizing models of human behavior, (6) organization theory, (7) reductionism, (8) communication theory, and (9) theories of social conflict.

808. Empirical Political Theory.
Prerequisite: POL 701.
This course provides a critical examination of the principal empirically oriented models and theories used in political science. The works of major empirical political theorists will be reviewed.

810. Seminar in Political Behavior.
Prerequisite: Consent of instructor and graduate standing.
An examination of concepts, theories and methods in micro level political analysis.

811AB. Political Opinion and Electoral Behavior. 5 hours each.
Prerequisite: Graduate standing.
A research seminar on political opinion and voting behavior, with emphasis on psychological, social, and political determinants. Techniques of survey research are also covered.

812. Seminar in American Government.
An advanced, intensive study of American Government with particular emphasis upon American governmental institutions and processes.

813. Research in Political Parties and Interest Groups.
Prerequisite: POL 610 or 613, or consent of instructor.
A research seminar dealing with cross-national analysis theory and research on political parties and interest groups, in terms of their functions in the political system, influence on public policy, and internal operation.

814. Research in the Legislative Process.
Prerequisite: POL 614 or consent of instructor.
Theory and research in comparative legislative institutions and behavior among nations and localities, with emphasis on parties, committees, recruitment and socialization, decision-making, and linkages to other elements of the political system. Distinctive methoas available include roll-call analysis, examination of committees as social systems, and use of election data.

815. (FIN/ECN/RE) Metropolitan Fiscal Problems. (Billings)

816X. (HIS) Research Seminar in National Security.

818AB. Readings and Research in American Government. 5 hours each.
An independent study of selected topics and problems in American Government.

819AB. Readings, Research in Political Behavior. 5 hours each.
Readings and research in selected topics on political behavior.

820. Reading and Research in International Politics.
An advanced seminar on the major approaches to the study of international relations; systems analysis, power analysis, decision-making analysis and game theory.

821. International Cooperation and Organization.
An advanced seminar in the principles, structure, and practices of international governmental organizations.

822. International Legal Processes.
An advanced seminar designed to provide intensive individual or small group instruction and research for graduate students in the theory, principles and current problems in the development of international law.

823. International Conflict.
Prerequisite: A course in international relations or permission of instructor.
An advanced study of the threat or use of force in international relations, including the sources of conflict, the types of conflict, and the resolution of conflict situations.

824. International Integration and Supranationalism.
Prerequisite: A course in international relations or permission of instructor.
A study of the proposals, possibilities, and essential conditions for the transformation of the sovereign state system, by integration and supranationalism, into a more stable world order.

825. Foreign Policy.
Prerequisite: A course in international relations or permission of instructor.
An advanced study of both the domestic and international sources, content, and consequences of a state's efforts either to influence, or to adapt itself, to other states' behavior.

830AB. Seminar in Comparative Analysis. 5 hours each.
Prerequisite: POL 694 or consent of the instructor.
A detailed examination and critique of the major theoretical approaches to the comparative study of political systems, the methodology of comparative research, and the issues of data collection and analysis.

831AB. Readings and Research in Western Political Systems. 5 hours each.
A course designed to provide individual or small group instruction for graduate students interested in intensive study of selected special problems in the comparative study of political systems.

832AB. Political Development and Social Change. 5 hours each.
Prerequisite: Graduate standing.
Directed readings and research in the theory of creating integrated, viable, modernizing political systems in a world of economic inequalities. The focus is on the kinds of political institutions that can help manage the social stress of racial, ethnic, cultural, social, economic, technological and ideological diversity.

833AB. Seminar in Communist Political Systems. 5 hours each.
A research seminar emphasizing the political processes, ideology, and change in the USSR, Yugoslavia, China and other Communist party states.

837. (FIN) Quantitative Analysis for Public Decision-Making. (Billings)

841. Problems in Public Administration.
A course designed to provide individual or small group instruction for graduate students interested in advanced problems in public administration.

842AB. Seminar in Selected Problems in Public Personnel Administration. 5 hours each.
Deals with the development of the collective negotiations movement. Stresses analysis of key policy issues, such as bargaining rights and the use of the strike weapon. Considers alternative procedures for resolving conflict between public employees and management.

843. Seminar in Public Budgeting.
Prerequisite: Graduate standing.
A detailed examination of methods and research in public budgeting in the policy and decision-making processes. Both the practice and theory of budgeting are examined. Particular attention is given to the concept of the Planning-Programming-Budgeting System and its implications for governmental operations.

845. Seminar in Comparative Public Administration. 5–10 hours.
Research oriented seminar for advanced students in political science. A comparative analysis of administrative structures and processes in different cultural and political settings.

846. Seminar in Government Organization and Administrative Theory.
Prerequisite: POL 646 or permission of instructor.
This course is designed to provide individual or group research on various theories of organization, management, and public administration as they relate to the study of government organizations. Special attention will be given to the design of appropriate research focusing on the institutional and behavioral elements of organization.

847. Seminar in Information Processing in Public Administration.
Prerequisite: Graduate standing.
This course is designed to provide individual

and group study of the human organization as an information system and is aimed at the application of current information theories, methods, and practices to the study of governmental organizational behavior.

868. Seminar in Urban Politics.
An advanced study of politics in urban communities. Topics provide government organization, community power structures, urban political organizations, and selected problems in urban government.

869. Politics of Sub-National Units.
Prerequisite: Graduate standing.
A research seminar dealing with subnational political systems, with emphasis on environmental variables, political system variables, and policy outputs. Units of analysis include states, urban and rural communities, and provinces.

875. Systems of Political Philosophy. 5–10 hours.
Prerequisite: POL 685–686 or consent of the instructor.
A detailed examination of the writings of a leading political philosopher, aimed at seeing how the elements of his thought form a comprehensive and unified view of political life. The men to be studied from year to year will include Plato, Aristotle, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Marx, and Nietzsche. Classic works in American thought such as *The Federalist* will also be considered.

876. Problems in Political Philosophy. 5–10 hours.
Prerequisite: Graduate status.
A study of selected problems in political philosophy. The problems include the nature of justice; the functions of government; the grounds of legitimate authority; the scope of individual rights; the foundations of democratic government; political obligation; civil disobedience, and revolution, the meaning of responsibility; views of human nature and their political relevance.

877. Recent Political Thought.
Prerequisite: Graduate standing.
A study of important and influential political theories of recent times, including ideologies and scientific theories as well as contributions to political philosophy. The aim will be to understand both the approaches to political theory that have emerged in the contemporary period and the alternative interpretations that have emerged in the contemporary period and the alternative interpretations that have been given of contemporary man and society.

878. Epistemological Foundations of Political Inquiry.
Prerequisite: POL 701 or consent of the instructor.
A study at the advanced level of alternative methods of political inquiry and the assumptions about human knowledge and scientific methodology that underlie them. Attention will be focused on political philosophy as a method of inquiry, not on the substantive problems with which it deals, and on its relationship to other methods now prevalent in the discipline of political science.

879. Readings and Research in Political Philosophy. 5–10 hours.
Prerequisite: Graduate standing and consent of instructor.
Independent study of selected problems or works in political philosophy.

883, 884. Problems of Constitutional Government in the United States. 5 hours each.
Prerequisite: Graduate standing or consent of instructor.
A course designed to provide individual or small group instruction for graduate students who are interested in an intensive study of special problems of American government.

885, 886. Readings and Research in Problems of Government in Georgia. 5 hours each.
Prerequisite: Graduate standing or consent of instructor.
This course is designed to provide individual instruction for graduate students in an intensive study of special problems of Georgia government.

887. Public Policy Seminar. 5–10 hours.
Prerequisite: Graduate standing.
Research seminar on the major theoretical approaches to decision-making in substantive public policy. The choice of the substantive issues to be studied will be tailored to student's needs. For example, each student in the seminar could study the policy-making process in a different issue area, or the seminar could focus on a different issue area each quarter. Examples of substantive areas which would be covered are military policy and social welfare policy.

888AB. Seminar in Law Enforcement Administration. 5 hours each.
A research seminar in the methods of policy analysis, data collection, and change initiation related to legal administration.

920. Special Problems in Political Science. 5–10 hours.
A research/problems course designed for students for advanced graduate standing. Students

must have completed a minimum of four courses in the general area in which he selects his major topic.

930. Thesis. 5–50 hours.

POULTRY SCIENCE (PS)

M. G. McCartney
(Livestock-Poultry Building, South Campus)

The Department of Poultry Science offers excellent opportunities for graduate study for qualified students with degrees in biology, chemistry, economics and poultry science. Graduate programs leading to the M.S. and Ph.D. degrees are offered in the fields of poultry products, nutrition, genetics, physiology, production economics and diseases and parasites. Facilities for graduate training include laboratories with the latest equipment for studies in lipid and mineral metabolism, environmental and reproductive physiology, physiological and population genetics and in avian diseases and parasites.

Equipment is available for electrophoretic and chromatographic separation, fractionation procedures, and use of radioactive isotopes, including a whole body counter. Specialized equipment includes liquid scintillation detectors, infrared, ultraviolet and dual spectrometers, ultracentrifuge, amino acid analyzer, gas-liquid chromatograph, special isolators for gnotobiotic studies and numerous other modern instruments.

Experimental poultry facilities are also available for studies, where large numbers of birds are required for research in the various areas of specialization in the graduate program, including a controlled temperature house for work in environmental physiology.

Superior students are encouraged to apply for graduate assistantships and fellowships which are available through the department.

Doctoral language requirement: one language.

The 800 numbered courses in nutrition are listed in the offerings of animal nutrition.

601. Avian Physiology. 5 hours. Three hours lectures and two 2-hour laboratory periods. (Huston)
Prerequisite: CHM 240, PS 380.
A study of physiology of circulation, respiration, excretion, metabolism, and the nervous system of the fowl with emphasis on the glands of internal secretion. (Spring quarter.)

605. Advanced Poultry Breeding. (Washburn)
Prerequisite: PS 372.
The development of practical poultry breeding programs with a sound genetical background. A study is made of the mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement. (Spring quarter.)

633. Basic Mycotoxicology. (Wyatt)
Prerequisite: BIO 102 and CHM 261 or equivalent.
A study of mycotoxins as they relate to agriculture. Various mycotoxins apt to occur in feedstuffs will be discussed. Major areas of emphasis are fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control. (Spring quarter.)

636.(AN/AS) Ruminant Nutrition.

637. (AN/AS) Monogastric Nutrition.

682. Avian Embryology. 5 hours. Three lectures and two 2-hour laboratory periods. (Howarth)
Prerequisite: BIO 101 and 102, or permission of instructor.
A comprehensive, in depth study of avian development from gametogenesis through organogenesis. (Winter quarter.)

760. Advanced Poultry Science and Practice.
Prerequisite: Permission of instructor.
An advanced course designed to provide current information on poultry genetics and physiology, nutrition, environment, market products technology, health and economics. Graduate credit limited to those students in professional degree programs. (Summer quarter.)

806. Physiology of Avian Reproduction. 5 hours. Three lectures and two 2-hour laboratory periods. (Huston)
Prerequisite: CHM 240 and PS 380.
A consideration of the fundamental biological aspects of avian reproduction. Knowledge of the fundamentals and mastery of techniques will be utilized in the working of problems in reproduction in the domestic fowl. (Offered summer quarter.)

808. (AM) Parasitic Diseases of Poultry. 5 hours. Three lectures and two 2-hour laboratory periods. (Reid, Ruff)
Prerequisite: ZOO 372 or equivalent.
An intensive study of life histories and ecological factors useful in control of poultry parasites. (Winter quarter.)

809. Poultry Diseases and Parasites.

810. Poultry Science Seminar. 1 hour.
Prerequisite: Three 5-hour courses in poultry or equivalent.
Reading, reports and discussions of problems related to the field of poultry. One hour credit per quarter. May be repeated for a total of five quarter hours credit. Required of all graduate students in poultry. (Winter quarter.)

812. Scientific Writing and Literature Searching. (Reid)
Prerequisite: Student must be in program related to life sciences.
After a review of available library literature, manual and computer methods of literature searching will be employed on a topic selected by the student. A primary research paper or a review paper will be organized, written and edited with a full bibliography on a topic selected with the aid of the major professor. (Summer and fall quarters.)

830. (PAR, ENT, PAT, ZOO) Seminar in Parasitology.

851, 852, 853. Problems in Poultry Science. 5 hours each.
Selected problems in specialized areas of poultry nutrition, genetics, physiology, products, pathology, parasitology and production economics.

930. Thesis. 5–50 hours.

PSYCHOLOGY (PSY)

Robert B. Payne
(Psychology Building, North Campus)

Graduate work leading to the Ph.D. degree is offered in biopsychology, clinical psychology, experimental psychology, measurement and human differences, and social psychology. No students are accepted only for the M.S. degree. Rather, students are admitted into the Ph.D. programs and are expected to complete the M.S. degree as part of the Ph.D. requirements. One foreign language is required.

The *biopsychology* program permits specialization in physiological psychology, comparative psychology, sensory communication, primatology, or some combination of the specialities. Primatology studies and research are carried out in cooperation with the Yerkes Regional Primate Research Center in Atlanta and at its field station in Lawrenceville. The *clinical* program, approved by the American Psychological Association, seeks to prepare the student for a variety of professional roles by giving him a solid foundation in technique, theory, and research in clinical psychology. In the *experimental* program, specialization is offered in learning and performance, perception, and complex processes. If he chooses, the student may elect a developmental approach to these problem areas. The *measurement and human differences* program permits the student to concentrate in psychometrics, industrial psychology, manpower utilization, educational research, and related areas. In the *social* program, substantive training is provided in the areas of cognitive and attitudinal theories, group structure and process, and personality and social development, along with methodological training in group observation, attitude measurement, and survey research.

Facilities for graduate training in psychology include relatively complete psychophysiological, psychoacoustical, psychomotor, and other experimental psychology laboratories, the Psychological Clinic providing diagnostic and therapeutic services, the University Testing and Evaluation Center, extensive human and animal research facilities, an electroencephalography laboratory for computer analysis of evoked potential responses, the Follow-Through program with its focus on developmental psychology, the University Computer Center, and a Research and Training Center for Mental Retardation. Other research opportunities are offered in the Institute for Behavioral Research and at the Yerkes Regional Primate Research Center.

With a few exceptions, applicants for graduate study in psychology are accepted to begin only in the fall quarter. Prospective students who desire financial aid should submit complete applications to the Graduate School by February 15th.

604. History of Psychology. (Noble, Peacock, Wilbanks)
Prerequisite: Five hours credit in senior division courses in psychology.
An overview of the history of psychology and recent systematic development.

605. Systems of Psychology. (Wilbanks)
Prerequisite: PSY 604.
An investigation of the theoretical systems in psychology since 1880, with emphasis upon the types of research which these systems have produced.

606. Psychology of Aging. (Barry)
Prerequisite: Introductory Psychology and Gerontology courses.
A survey of psychological research within the life span developmental model. The focus is on age-related changes in behavior during the later years of life. The implications for services to the aged, of age related changes in psychological functioning will be discussed.

607. Humanistic Psychology. (Hammes)
Prerequisite: Two upper division courses in psychology or equivalent.
As the "Third Force" in psychology, humanistic psychology includes the study of self-theory, being-psychology, and contributions of the humanities to psychology.

609. Psychology of Religion. (Hammes)
Psychological aspects of religion. Perceptual, intellectual, linguistic, emotional, and intrapersonal dimensions of the religious experience will be studied.

612. Clinical Problems. (Adams)
This course will cover various counter-conditioning approaches to the modification of deviant behavior including systematic desensitization and aversive conditioning techniques.

613. Clinical Problems. (Adams)
This course will cover various social learning and cognitive approaches to the modification of deviant behavior, including modeling and role playing. In addition it will focus on the applica-

tion of basic principles from social psychology to the modification of deviant behavior, including attitude change processes.

614. Psychology of Personnel. (Grant, Hammock)
A survey of the entire area of personnel psychology as applied to the fields of business, industry and government.

615. Psychometrics. (Hays, Lissitz)
A course designed to give the student an introduction to the essentials of psychological testing with experience in administering, scoring, and interpreting tests including those of scholastic achievement, mental ability, scholastic aptitude, interest and personality.

616. Individual, Psychological Testing: Wechsler-Bellvue Method. (Calhoun, Osborne)
Training in the administration, scoring, and interpretation of the Wechsler scales. A minimum competency in the use of these scales for both children and adults is required but the major part of the practical work may be in the age range selected by the student.

617. Introduction to Mathematical Psychology. (Lissitz)
A survey of the applications of mathematics of the problems of psychology. Includes approaches such as game theory, information theory, scaling, signal detection theory, and mathematical learning theory.

618. Individual Psychological Testing: Terman-Merrill Scales. 2 hours.
A course designed to give the student training in the administration, scoring, and interpretation of the Minnesota Multiphasic Personality Inventory.

619. Introduction to Projective Techniques: Rorschach Method.
An introduction to the theory, administration, scoring and interpretation to Rorschach Method. The class is limited and is open only to advanced students with adequate background in psychological measurement and theory of personality.

620. Introduction to Projective Techniques: TAT.
An introduction to the theory, administration, scoring and interpretation of the Thematic Apperception Test. The class is limited and is open only to advanced students with adequate background in psychological measurement and theory of personality.

622. Experimental Design in Psychopathology. 5 hours.
Prerequisite: PSY 658 and 661.
Research design and planning psychology.

623. Abnormal Psychology. (Mitchell)
The study of the various forms of mental illness and maladjustment, including mental deficiency, and antisocial behavior. The course is planned especially for students going into clinical psychology, medicine, nursing, social work, or special types of educational work. Lectures, discussions and clinical work.

640. Research Methods in Social Psychology. (Graziano, Tesser)
This course is designed to provide students with an in-depth review of the methods used in contemporary empirical research by social psychologists. Field and experimental approaches will be examined in terms of their relative strengths, weaknesses, and costs for various research questions. Topics will vary from quarter to quarter.

650. (SPA) Language Development.

651. Theories of Personality.
The biological and psychological foundations of personality will be studied. Emphasis will be placed on the integrative aspects of personality.

652. Learning and Motivation. (Allen, Noble, Payne)
A survey of the methods, data, and theories developed from experimental research on the processes of learning, motivation, incentive, inhibition, and related variables. Equal attention is devoted to human and infrahuman behavior.

653. Individual Differences. (Grant, Owens)
An examination of the nature and interrelationship of psychological traits, including maximum performance (intelligence, achievement, etc.) and typical behavior (interests, personality, etc.) traits. Also considered are the extent of racial, sex, age, and other group differences as well as the causal factors (genetic, environmental, etc.) in individual differences.

654. Psychology of Values. (Hammes)
Original readings on topics such as the contemporary value crisis, standardized value scales and the inventories, value system criteria, sources of values, and the future of value systems.

656. Psychology of Sensation. (Proenza)
A detailed consideration of the neuronal mechanisms underlying sensory experience. Emphasis is placed on the relationship between structure and function; laboratory demonstrations and experiments are provided.

657. Psychology of Perception. (Hazen)
The phenomena of perception are investigated. Empirical and experimental demonstrations are conducted, followed by a study of the various theories of perception.

658. Statistics in Psychological Research. (Lissitz, Mendoza)
A study of the basic concepts and techniques in descriptive and sampling statistics. Applications of statistics in psychological research.

659. Mental Hygiene.
An advanced course dealing with mental hygiene problems, especially of children and adolescents; problems of different stages of maturation; adjustments in the home, school, and group.

660. Dyadic Interaction Analysis. (Boardman)
Theories of personality, interpersonal behavior, and social learning are examined from the standpoint of their applicability for understanding the process of psychotherapy.

661. Advanced Experimental Psychology. (Lissitz, Mendoza)
Prerequisite: PSY 658.
Emphasis is placed upon experimental techniques and methods of experimental work. Especially designed for the student who desires to learn scientific method in psychology.

664. Advanced Social Psychology.
This survey course includes ethics in social research; social factors in perception; attitude formation and change; cognitive theories; group structure and process; ideology and personality; and social motivation.

665. Methods and Practices in Clinical Psychology.
Prerequisite: Consent of the instructor.
Examination of the professional role of the clinical psychologist. Ethical and professional issues, differing theoretical, philosophical and applied points of view represented in the field of clinical psychology.

666. (SPC) Psychology of Speech. (Freshley)
Prerequisite: SPC 108 and PSY 101 and two senior division courses in speech, classics, psychology or English.
A study of speech as a psychological phenomenon: the use of symbols, the speech personality, emotional reactions and higher mental processes in speech, psychological studies of language and vocal and visual symbolism.

672. (EPY) Programmed Instruction. (Hammock)
Prerequisite: PSY 101 or EPY 304.
A study of the theory, evaluation and writing techniques of programmed instruction with practice in writing a program.

674. (PHY) Philosophy of Mind.

675. Principles of Primate Phylogeny. (Bernstein)
Basic introduction to primatology presenting elementary biological concepts for students of behavior. Evolutionary, genetic, systematic and paleontological viewpoints are examined in exploring the boundaries of the Order Primates and the relationships within the order.

676. Comparative Physical and Psychological Development of the Primates. (Bernstein)
Laboratory studies of primate development will be examined to explore the relationships between early experience and behavioral abnormalities. The interrelationship of physical and behavioral development will be explored using the literature on environmental manipulations.

677. Organizations of Primate Social Groups. (Bernstein)
The relationships of ecology and phylogeny to primate social organization patterns are explored. Field studies are examined for comparisons with theoretical views.

680. Physiological Psychology. (Isaac)
Prerequisite: 10 hours of biology.
Behavior is viewed as the integration of the morphological, physiological, and psychological aspects of the organism. Emphasis is placed mainly on the relationship between the internal environment and such behaviors as food intake control; mating behavior; neural action; emotion; etc.

681. Comparative Psychology. (Bunnell, Thomas)
Prequisite: 10 hours of biology.
An analysis of the structure and behavior of the amoeba and the animal series to man. The integration of structure, physiological processes and behavior are emphasized throughout the course, resulting in a more thorough understanding of the adjustment process.

691. Foundations of Behavior I. (Bunnell, Isaac, Thomas)
Prerequisite: Consent of instructor.
An intensive survey of the literature in the fundamental aspects of physiological and comparative psychology.

692. Foundations of Behavior II. (Mulligan, Wilbanks, Proenza)
An intensive survey of the literature in the fundamental aspects of sensation and perception.

761. (MKT) Behavior Theory in Marketing. (Eakin)
Prerequisite: MKT 360.
The psychology of decision formation and action are analyzed in relation to the motives, attitudes, and expectations of consumer and

businessman that contribute to the marketing process.

782. (MAN) Personnel Measurement.

786. (MAN) Wage and Salary Administration.

787. Work and Efficiency. (Finn, Leonard)
Human factors in relation to work and equipment design; principles of work measurement.

788. (MAN) Personnel Selection and Placement. (Finn)

800A–E. Advanced Topics in Psychology. 5 hours each.
The purpose of this seminar is to examine current topics and new developments in the field of psychology.

804. Animal Learning. (Bunnell, Peacock)
Prerequisite: Consent of instructor.
Techniques and problems in the use of infrahuman subjects in the study of the learning process. Classical and instrumental conditioning, discrimination learning, and related methods are discussed and demonstrated.

805. Theories of Learning. (Payne)
An analysis of the major theories of learning current among research psychologists.

806. Vision. (Mulligan, Proenza)
Prerequisite: PSY 656.
A detailed examination of the major phenomena of vision.

807. Audition. (Mulligan, Wilbanks)
Prerequisite: PSY 656.
Theories of hearing and their experimental bases are examined in detail, along with demonstrations of experimental techniques in the area.

808. Senses Other than Audition and Vision. (Mulligan)
Prerequisite: PSY 656.
Animal orientation, animal communication, and the evolution of sensory-perceptual systems are studied.

809. Cutaneous, Orienting, and Chemical Sensitivity. (Mulligan, Wilbanks)
A study of the cutaneous, orienting, and chemical senses.

810. Seminar in Humanistic Psychology. (Hammes)
Original readings in "Third Force" psychology by representatives such as Fromm, Maslow, Rogers, May, and Frankl.

812. Group Personality Assessment. (Barry)
Prerequisite: Measurement and Personality Theory courses.
Research on the development of comprehensive and multi-level personality test batteries for a variety of group assessment and selection situations. Implications for personnel psychology and clinical psychology practices will be discussed and illustrated.

813. Clinical Procedures in Psychology: Children.
Prerequisite: Consent of instructor.
The theory, practice, and research pertaining to group treatment approaches will be examined with the major focus on adults.

814. Clinical Procedures in Psychology: Children.
Prerequisite: Consent of instructor.
Surveys, historical trends and contemporary theories of psychopathology; reviews methods, issues, validity and utility of classificatory systems; evaluates the intrinsic-attribute properties of various behavior disorders as well as related assessment and treatment procedures.

815. Rorschach Interpretation.
Prerequisite: Permission of instructor.
Clinical application of projective tests, with major emphasis on the theoretical assumptions and interpretations involving the Rorschach technique.

817. (SPA) Theories of Language Development and Disorders.

818. Community Psychology and Social Welfare Research. (Barry)
A review of research frontiers and new approaches in community psychology, rehabilitation, and social welfare services. Includes program development and planning, and program evaluation in a variety of social problem areas.

820A. Classical Conditioning.
Prerequisite: One year graduate work in psychology.
Analysis of Pavlovian theories and procedures; the reinterpretation of the conditioned reflex phenomena by Konorski in research and treatment of the abnormal: salivary and motor conditioning of animals.

820B. Operant Conditioning. (Allen)
Prerequisite: Graduate standing.
Theoretical and practical approaches to the assessment of free-ongoing behavior. Laboratory exercises in the circuitry and logic of operant conditioning apparatus and design are included.

821A. Human Selective Learning. (Noble)
Principles of nonverbal multiple-choice learning in man is examined under five headings: task complexity, feedback contingencies, work distribution, transfer of training and individual and group differences.

822A. Verbal Learning and Behavior. (Leonard, Noble)
Verbal learning will be examined in conjunction with the prominent general theories of learning. Effects of several characteristics of verbal materials on verbal learning and verbal behavior will be discussed with attention being given to commonly used paradigms of verbal learning.

822B. Human Memory. (Hodge)
A critical examination of the major phenomena, experimental procedures, and theoretical models of human memory.

823A. Classical Perception. (Pollack)
Prerequisite: Graduate standing in psychology.
Discussion of classical problem areas of perception (e.g. contour, movement, illusions) with emphasis on the perceptual process and its relation to other psychological functions.

823B. Seminar in Contemporary Perception. (Hodge)
Prerequisite: PSY 692, 823A, or equivalent.
An examination of contemporary research concerned with detection, recognition, and choice processes.

823C. Organismic Variables in Perception. (Pollack)
Prerequisite: PSY 823A, or equivalent.
Discussion of such variables as body state, set, and motivation in the perceptual process, with emphasis on the organismic nature of perception.

830. Advanced Physiological Psychology. (Thomas)
Prerequisite: PSY 691 or equivalent.
Analysis in depth of basic topics in physiological psychology. Emphasis is placed upon functional neuroanatomy of mammals to provide understanding of systems for neural control of perception, orientation, motivation, learning, and complex processes.

831. Advanced Comparative Psychology.
Prerequisite: PSY 681, 691, or equivalent.
Analysis in depth of basic topics in comparative psychology. Includes: history; relation to other disciplines; behavior genetics; ontogenetic principles and processes; problems in the comparative study of complex processes.

832. Motivation: Biological. (Peacock)
Prerequisite: PSY 691.
The behavioral and physiological bases of the major motivational states, including hunger and thirst, are examined. The motivational aspects of intracranial stimulation, behavioral periodicites, and other current topics are considered.

833. Laboratory Apprenticeship in Physiological and Comparative Psychology.
Prerequisite: PSY 691.
A laboratory-tutorial course in the approaches and research methods of physiological and comparative psychology. Maximum credit will be limited to 25 hours, taken under various instructors.

834. (ANT) Functional Anatomy of the Nonhuman Primates. (Bernstein)
Prerequisite: Permission of instructor.
Anatomical and behavioral interrelationships and possible adaptive significance to habitat are examined. Specific topics are selected by students. A seminar oriented to primatology students.

835. (ANT) Field and Laboratory Techniques in Physical Anthropology and Primatology. (Bernstein)
Identical with laboratory apprenticeship and focuses on primate colony management, handling and research methodology using the Yerkes Field Station facilities.

837. (SOC) Theories of Social Psychology.

839ACDE. Seminar in Physiological Psychology. 5 hours each.
Prerequisite: PSY 691.
Designed to explore in depth particular problem areas within physiological psychology. May be taken to a maximum of 20 hours credit. Emphasis is placed upon evaluation of current research and theory and students' development of original research ideas.

839BFGJ. Seminar in Comparative Psychology. 5 hours each.
Prerequisite: PSY 691.
Designed to explore in depth particular problem areas within comparative psychology. May be repeated to a maximum of 20 hours credit. Emphasis is placed upon the evaluation of current research and theory in the development of research ideas by the student.

840. Instrumentation in Behavioral Research. (Peacock)
Prerequisite: Consent of instructor.
Fundamentals of electronics and electronic devices, relay circuitry, and instrument systems related to behavioral research. Laboratory practice in the design and construction of frequently used apparatus.

841. Physiological Bases of Behavior.
Prerequisite: Permission of instructor.
An examination of the physiological bases of human behavior including neurophysiology, neuropathology, psychopharmacology, endocrinology, and psychosomatic disorders.

850. Clinical Staffing Procedures. (Boardman)
Prerequisite: Permission of instructor.
Practicum in clinical psychology. Supervised experience in assessment and treatment of clinical problems using a wide variety of applicable techniques. Professional roles and ethical concepts of the clinical psychologist are integrated with clinical procedures.

853. Psychiatric Methods. 3 hours.
Prerequisite: Consent of instructor.
Clinical psychiatry including a diagnostic approach and physical and psychotherapeutic treatment methods.

861. Psychophysical Methods and Psychological Scaling. (Hodge)
Prerequisite: Consent of instructor.
An examination of methods and appropriate theories to the investigation and scaling of sensory and nonsensory stimulus events. Single and multidimensional scales are considered.

863. Nature of Psychological Inquiry. (Hodge)
Prerequisite: PSY 658.
A detailed consideration of the theoretical and methodological foundations of psychological research. Problems encountered in the planning of experiments and other types of research.

870. Methods for Observing Social Interaction. (Rosen)
Prerequisite: Consent of instructor.
A course designed to provide a first-hand acquaintance, at an advanced level, with representative systematic observational approaches. The advantages and limitations of observational techniques are also considered.

871. Theories of Attitude Structure, Formation, and Change. (Graziano, Shaffer, Tesser)
Prerequisite: PSY 664.
A comparative examination of theoretical approaches to the organization and formation of beliefs and attitudes, to cognitive consistency, and to the determinants of attitude stability and change.

872. Group Structure and Process. (Rosen)
Prerequisite: PSY 664.
An examination, at an advanced level, of situational and individual determinants of social structure and interaction in face-to-face groups. Various theories of exchange, equity, power, and leadership are considered.

879. Advanced Seminar in Social Psychology. 5 hours. Max. 15 hours.
Prerequisite: PSY 664.
Illustrative topics are social motivation; conformity; social power; interpersonal perception; simulation and mathematical models of social behavior; and vicarious learning.

880. Developmental Psychology. (Bernstein, Richman, Smock, von Glasersfeld)
Critical survey of evidence concerning physical, social, and psychological development of primates. Special emphasis is placed on comparative analysis for understanding human development.

881. (LIN) Language and Reality. (von Glasersfeld)
Prerequisite: Interview with instructor.
The course focuses on the discussion of three questions:

How does language communicate?
What is communicated?
What is the relation between meaning and reality?

The history of epistemology is examined from a psycholinguistic point of view, the child's cognitive development and acquisition of language are discussed, and recent cybernetic approaches to the problems of communication and the concept of "reality" are presented.

882. (LIN) Psycholinguistics. (von Glasersfeld)
Prerequisite: Interview with instructor.
The course surveys recent theoretical and experimental work in psycholinguistics and psychosemantics. Cognitive and linguistic development are discussed and the conceptual presuppositions of ordinary language usage are examined. The course comprises a working seminar during which a specific section of English semantics is subjected to conceptual analysis.

884. Personality and Social Development. (Shaffer)
Survey of literature relevant to early childhood determinants and developmental processes to personality and social behavior. Current research, theories and methodological issues are emphasized.

885. Perceptual Development. (Pollack)
Prerequisite: PSY 880 or equivalent.
Discussion of ontogenetic changes in perception and their importance for other cognitive processes with emphasis on the building of a useful developmental theory.

886. (LIN) Cognitive Development. (Richman, Smock, von Glasersfeld)
Prerequisite: PSY 880 or equivalent.
Analysis and discussion of current research on problems, issues, and theories relevant to the development of complex cognitive processes.

887. Theories of Psychological Development. (Pollack, Smock)
Prerequisite: PSY 880 or equivalent.
Evaluation of the logical and empirical adequacies of modern theories of psychological de-

velopment in relation to selected issues relevant to theory construction in the behavior sciences.

888. Human Sexual Behavior. (Pollack)
Prerequisite: Permission of instructor.
An examination of the nature and variety of human sexual behavior in many settings.

889ABC. (LIN) Seminar in Developmental Processes. 5 hours each.
Prerequisite: 10 hours of graduate work in psychology.
Study of current topics in developmental psychology. Emphasis on independent study and research.

890. Research in Child and Family Development.

892. (CFD) Behavior Problems in Children.

893. Advanced Psychological Measurement. (Grant, Owens)
Prerequisite: PSY 615.
Aptitude and ability test construction; reliability; criterion development; validity; and item analysis.

894. Cognitive Measurement. (Grant, Lissitz)
Prerequisite: PSY 893.
A survey of classical and contemporary readings related to the applications of measurement to industry, education, and related areas of the behavioral sciences. Among the problems considered are scales, reliability, validity, change scores, differential predictions, criterion-referenced tests, governmental regulations, etc.

894. Non-Cognitive Measurement. (Grant, Owens)
Prerequisite: PSY 893.
Approaches to interest and personality measurement; artifacts and methodology, dimensions, organization and utility; nominal scale analysis.

899. Seminar in Psychometrics. 2–15 hours.
Prerequisite: PSY 894 or 895.
Consideration of significant and current topics as defined by the interests and research activities of the staff.

900. Special Problems. 3–30 hours.
Prerequisite: Consent of instructor.
Extensive readings or empirical research in selected areas or planning and pilot studies preparatory to a thesis.

920. Clinical Internship in Psychology.
Prerequisite: Consent of instructor.
Students will engage in the professional practice of clinical psychology under constant and close supervision. This professional work will include treatment of patients, group and individual psychotherapy, teaching and research.

921. Counseling Practicum and Internship.
2–15 hours. Max. 50 hours.
Laboratory and field work under supervision, to include interviewing and counseling, vocational aptitude and interest testing, and the use of standard personality appraisal techniques.

930. Thesis. 5–50 hours.

ROMANCE LANGUAGES

John C. Dowling
(Moore College, North Campus)

The Department of Romance Languages offers programs leading to the M. A. and M.A.T. degrees in French, Spanish, or Romance languages, and to the Ph.D. degree in Romance languages. The doctoral degree consists of a major in French (Spanish) and a minor in Spanish (French); a reading knowledge of German and one other Romance language or Latin is required.

French 870F and 871F or Spanish 870S and 871S are required courses for an M.A. degree in French or Spanish under Plan A. Only 870S is required under Plan B.

Unless otherwise specified, students desiring graduate credit in any of the following courses must offer as a prerequisite French or Spanish 211 and 310 or Italian 310, 311 or 360.

All courses carry 5 hours credit unless otherwise specified.

CATALAN (CAT)

601. Catalan Language and Literature. (Smith)
Prerequisite: At least four terms of another Romance language or Latin, or by consent of the instructor.
This course will teach a reading knowledge and basic conversational knowledge of Catalan, the essential grammatical structures, the main lines of literary history, and the importance of Catalan nationalism in the Spanish context.

FRENCH (FR)

610. French Culture and Civilization. (Lee, Piriou)
A study of the history of French culture and of its contribution to world civilization from the Middle Ages to the present. Social, political, cultural and technical developments are illustrated in lectures, slideshows and discussions. Given in French.

611. La France Contemporaine. (Piriou)
The making of contemporary French society from 1958 to the present, as derived from analysis of the interrelationship of cultural, social, economic and political factors. Given in French.

630. The Romantic Movement in France.
The origins, development and manifestations of the romantic movement in France.

631. The French Novel of the Nineteenth Century. (Carter)
The development of the novel and its relationship to the various literary movements of the 19th century.

632. French Poetry Since Romanticism.
Baudelaire; The Parnassians: Leconte de Lisle and Hérédia; The Symbolists: Verlaine, Rimbaud, Mallarmé.

633. French Drama of the Twentieth Century. (Davis, Piriou)
A study of representative works of major 20th century French playwrights. Given in French.

634. The French Novel of the Twentieth Century. (Barrick, Piriou)
A study of representative works of major 20th century French novelists. Given in French.

635. Contemporary French Poetry. (Barrick)
Analysis of major 20th century French poets. Given in French.

637. French Drama of the Nineteenth Century.
A study of the development of French drama in the 19th century from Romanticism to Post-Symbolism. Given in French.

659. French Literature of the Seventeenth Century. First Half. (Wolfe)
Prose and poetic styles as studied in selected masterpieces from Malherbe to La Bruyère. Given in French.

660. French Literature of the Seventeenth Century. Second Half. (Davis)
This course will concentrate almost exclusively on Corneille, Racine and Molière.

661. The Literature of the French Englightenment. (Lee)
A study of precursors and principal figures of the French Enlightenment. Given in French.

662. French Drama and Poetry of the Eighteenth Century. (Davis)
French 18th century literature as represented principally by drama.

663. French Prose Fiction of the Eighteenth Century. (Lee)
A study of representative works of major fiction writers of the 18th century. Given in French.

703. Oral French for Teachers. (Morain)
Development of advanced level listening and speaking skills emphasizing idiomatic aspects of French grammar and vocabulary expansion.

707F. (EFL) Applied French Linguistics. (Morain)

711, 712, 713. Teaching College French. 1 hour each.
A study of the problems and procedures of teaching French at the college level.

756. Advanced French Syntax and Compositon.
Comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of French. Acquired knowledge will be applied in weekly compositions.

757. (LIN) French Phonetics.
A careful analysis of each of the sounds in French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription: use of tapes.

781. (EFL/GER/SP) Problems of Teaching Romance Languages.

795, 796, 797. Study Abroad in French. 5 hours each.

805, 806. French Literature of the Sixteenth Century. 5 hours each. (Hassell)
A historical survey of French literature from the accession of Francis I to the death of Henry IV. Lectures, collateral readings, reports.

809, 810, 811. Seminar on Romanticism. 5 hours each.
Deals with one major writer of the romantic period.

812, 813, 814. Seminar on the Nineteenth Century Novel. 5 hours each.
An intensive study of one novelist.

820, 821, 822. Seminar on Twentieth Century French Literature. 5 hours each.
An intensive study of one major 20th century writer.

830. The Symbolist School I: Baudelaire and Verlaine.
A detailed examination of the works of Baudelaire and Verlaine and of their influence on the symbolist poets who followed.

831. The Symbolist School II: Rimbaud and Mallarmé.
Includes the minor poets also.

840, 841, 842. Seminar on Seventeenth Century French Literature. 5 hours each. (Davis)
An intensive study of one major author or a group of authors with similar concerns.

850, 851. Readings and Research in French Literature. 5 hours each.
This course will require extensive and intensive readings in French literature and in pertinent critical writings. The field to be covered will be determined by the student's previous background but will in all cases presume that the student is capable of reading French rapidly with comprehension.

855. Methods of Bibliography and Research. (Smith)
A study of the methods, techniques, and procedures of research. Special emphasis will be placed on the use of bibliographical resources.

870F, 871F. (LIN) Introduction to Old French. 5 hours each. (deGorog)
A history of the French language from the appearance of the first texts in the ninth century to the Renaissance, with linguistic analysis of representative texts. Phonology and morphology.

872. Introduction to Old French Literature. (Smith)
Prerequisite: FR 870, 871.
A survey of old French literature; a study of its history and of important individual works, with emphasis upon their literary values.

875, 876. Middle French Literature. 5 hours each. (Hassell)
Prerequisite: FR 805, 806, 872.
A survey of middle French literature, with special emphasis on the major figures (such as Froissart, Commynes, Guillaume de Machault, Eustache Deschamps, Charles d'Orléans, and Francois Villon) and movements.

930. Thesis. 5–50 hours.

ITALIAN (ITA)

631. Petrarch and Boccaccio. (Cocco)
A study of early Italian humanism through the *Ganzoniere* and selected prose works of Petrarch and the *Decamerone* of G. Boccaccio.

671. The Italian Novel.
A study of the Italian novel from Manzoni to the present, including works by Verga, Pirandello, Svevo, Pavese, Vittorini, and Calvino.

691. Topics in Italian Literature.
A study of specific Italian literary works, to be selected according to students' needs and interests. Selection may be determined by genre, author, or period. Lectures, papers and reports.

875. Dante.
Prerequisite: Italian 104 or equivalent, or permission of instructor.

Detailed study of the *Divina Commedia* and *Vita Nuova*, two of the most important works of literature produced in the Western world. Lectures, papers, and reports.

PORTUGUESE (POR)

620. Masterpieces of Luso-Brazilian Literature. (Ramirez)
A study of major Portuguese and Brazilian writers from medieval times to the present. Special emphasis on the works of Camões, Gil Vicente, Eca de Queriroz, and Fernando Pessoa of Portugal; and Olavo Bilac, Machado de Asis, Erico Verissimo, Jorge Amado, Manuel Bandeiro and others of Brazil.

PROVENCAL (PRO)

878, 879. (LIN) Provencal Language and Literature. 5 hours each. (Smith)
Development of the Provencal language from Latin; literature of Provence, with special attention to the poetry of the troubadours.

ROMANCE (ROM)

880. (LIN) Romance Paleography. (Hassell)
A study of the leading scripts used in writing the Romance literatures of the Middle Ages, and of the techniques of editing works from these literatures.

890. (LIN) Romance Linguistics. (deGorog)
Prerequisite: At least 20 hours in one Romance language or by permission of the instructor.
An introduction to Romance linguistics with treatment of the structure and development of the various Romance languages as well as dialectology, linguistic geography and the application of structural linguistics to Romance languages.

SPANISH (SP)

610. Spanish Culture and Civilization. (Dowling)
A study of the geography, history, arts, and letters of Spain from the beginning to the present. Given in Spanish.

611. Spanish American Culture and Civilization. (Hernéndez)
A study of the geography and complex process of the cultural, historical and political evolution of the Spanish-American countries from the origins of the indigenous civilizations to the present. Given in Spanish.

617. Golden Age Drama: Lope de Vega and His Contemporaries. (Lundelius, Ziomek)
A study of the origins of the Spanish theater through the first half of the Siglo de Oro. Given in Spanish.

618. Golden Age Drama: Calderón and His Contemporaries. (Lundelius, Ziomek)
A study of the representative works of the masters of the Siglo de Oro *comedia*. Given in Spanish.

619. The Spanish Novel of the Twentieth Century. (Ramírez)
The development of the Spanish novel from the Generation of 1898 to the present.

620. The Spanish Novel of the Nineteenth Century.
A study of the Spanish novel from the beginning of *costumbrismo*, regionalism, and realism to the end of the 19th century. Given in Spanish.

622. Spanish Prose of the Golden Age. (Ziomek)
A study of the novel and short story of this period with emphasis on Cervantes.

623. The Drama of the Nineteenth Century. (Dowling)
The development of Spanish drama from Moratín's neoclassic comedies to the realistic plays of Galdós and the early Benavente. Special emphasis on the romantic drama. Given in Spanish.

624. Spanish Prose Before the Golden Age.
A study of the exemplar collections, La Celestina, the chivalresque, sentimental, and Moorish novel.

625. The Spanish Drama of the Twentieth Century. (Ramírez)
The development of Spanish drama from Benavente to the present.

627. Spanish Poetry of the Golden Age. (Mantero)
A critical study of the currents of Spanish poetry from 1500 to 1700.

632. The Modernista Movement in Spanish America. (Mantero)
A study of Rubén Darío, his contemporaries, and followers. Given in Spanish.

633. Spanish-American Short Story. (Scott)
A study of the development of the short story in Spanish America from colonial times to the present. Given in Spanish.

634. Modern Spanish American Novel. (Hernández, Ramírez)
A study of the novel as a literary form in Spanish

America from colonial times to the present. Given in Spanish.

635. Spanish American Drama. (Ramírez)
An intensive study of the main trends, authors, and dramatic works from the colonial period to the present.

636. The Spanish American Essay. (Scott)
A representative study of the history of the essay in Spanish America from the colonial period to the present. Given in Spanish.

637. Contemporary Spanish American Poetry. (Mantero)
The major poetic figures of the 20th century since the Modernista Movement. Given in Spanish.

650. Eighteenth Century Spanish Literature. (Dowling)
A study of the developments in Spanish letters and thought in the 18th century. Given in Spanish.

652. Spanish Romanticism. (Dowling)
A study of the origins and development of the romantic movement in Spain. Given in Spanish.

655. Spanish Poetry of the Nineteenth Century. (Mantero)
A study of Spanish lyric and narrative poetry from Romanticism to the end of the 19th century. Given in Spanish.

656. Contemporary Spanish Poetry. (Mantero)
Readings in the poets of the various schools of the 20th century. Given in Spanish.

660. Generation of 1898.
The origins, development, and influence of this early 20th century renaissance of Spanish letters. Given in Spanish.

703. Oral Spanish for Teachers. (Kalivoda)
Development of advanced level listening and speaking skills emphasizing idiomatic aspects of Spanish grammar and vocabulary expansion.

707S. (EFL) Applied Spanish Linguistics. (Kalivoda)

711, 712, 713. Teaching College Spanish. 1 hour each.
A study of the problems and procedures of teaching Spanish at the college level.

726. Advanced Spanish Syntax and Composition. (Hernández)
A comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of Spanish.

728. (LIN) Spanish Phonetics. (Hernández)
A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation.

781. (EFL, GER, FR) Problems of Teaching Romance Languages.

795, 796, 797. Study Abroad in Spanish. 5 hours each.
Courses in Spanish offered by the Study Abroad Program of the University System of Georgia.

801, 802, 803. Seminar in Golden Age Literature. 5 hours each. (Gómez, Ziomek)
An intensive study of a topic selected from Golden Age literature.

808. Cervantes. (Ziomek)
A study of Cervantes' work with emphasis on Quixote and the exemplary novels.

817, 818. Seminar in Nineteenth Century Spanish Literature. 5 hours each.
An intensive study of a major writer or writers, their literary work, or main trends of nineteenth century Spanish literature. Each author is studied in depth and the student has ample opportunity for individual research and additional intensive readings.

831, 832, 833. Seminar in Twentieth Century Spanish Literature. 5 hours each. (Dowling, Ramirez)
An intensive study of a representative writer, or writers, their works or trends of 20th century Spanish literature, beginning with the Generation of 1898.

840, 841, 842. Seminars in Spanish American Literature. 5 hours each.
An intensive study of a representative writer or writers, their works, or of a major movement of Spanish American literature.

853, 854. Seminar in Eighteenth Century Spanish Literature. 5 hours each. (Dowling)
A concentrated study of a major writer or writers, their works, or trends of eighteenth century Spanish literature. Each author is studied in depth and the student has ample opportunity for individual research and additional intensive readings.

855. Methods of Bibliography and Research. (Snow)
A study of the methods, techniques, and procedures of research. Special emphasis will be placed on the use of bibliographical resources.

870S, 871S. (LIN) Introduction to Old Spanish. 5 hours each. (deGorog)
A history of the Spanish language from the appearance of the first Spanish documents until the Renaissance, with linguistic analysis of representative texts. Phonology and morphology.

872. Medieval Spanish Literature to 1350. (Snow)
Prerequisite: SP 870S and 871S.
A survey of old Spanish literature; a study of its history and of important individual works, with emphasis upon their literary values.

873. Late Medieval and Renaissance Spanish Literature 1350–1550. (Snow)
Prerequisite: SP 870S and 871S.
A study of the works of Pero Lopez de Ayala, Juan de Mena, the Marqués de Santillana, Gómez Manrique, Jorge Manrique, Juan Rodriguez de la Cámara, Diego de San Pedro, and with special reference to the *Cancioneros*, *La Danza de la Muerte*, the development of the theatre and the novel, and Italianate influence.

880, 881, 882. Seminars in Medieval Spanish Literature. 5 hours each. (Snow)
Prerequisite: SP 870S and 871S.
Detailed studies of themes in medieval Spanish literature, including the *Libro de Buen Amor*, the Epic, the *Mester de Clerecia*, Courtly Love, the origins of lyrical poetry, *Cancionero* poetry and the origins of the theatre to 1550.

930. Thesis. 5 to 50 hours.

SOCIAL WORK (SW)

Charles A. Stewart
(Tucker Hall, South Campus)

The School of Social Work curriculum is a variable length graduate program leading to the Master of Social Work degree. Admission may be obtained by persons holding a bachelors degree in any field if potential for graduate study is demonstrated and if the applicant displays interpersonal competence and sensitivity to the needs of others.

Graduate assistantships and federal traineeships in amounts up to $3,600 per year are available in limited numbers. In addition, public and voluntary agencies offer stipends in amounts up to $5,200 per year with a commitment of obligated service at a higher salary after graduation. Further details of this program may be found on page 34.

Supervised field instruction in two different settings is required. Field agencies include child welfare, psychiatric, medical, delinquency and crime, public assistance, family counseling, school social work, recreation, gerontology, vocational rehabilitation, and mental retardation.

Courses in the 600 and 700 series are designed primarily for pre-professional students or students who are pursuing a degree in a field other than social work.

600. Social Work Practice: Philisophy and Applications. 1–5 hours.
Role and function of professional social work practice in dealing with current social welfare problems. Historical background, ethical and normative consideration.

620. Social Policy and Services in Selected Social Welfare Areas. 1–5 hours.
Prerequisite: SW 600 or equivalent or permission of instructor.
Detailed study of one aspect of social welfare services of local, state, and national levels.

A. Income Maintenance and Social (or Economic) Security.
B. Families and Children.
C. Corrections.
D. Medical Services and Programs.
E. School Social Services.
F. Mental Retardation.
G. School of Social Work.

641. The Bases of Social Functioning I.
Theoretical perspectives on the processes by which individuals cope with change and maintain their social functioning. Dynamics of small groups and families within the broader social context of community. (Basic course in human behavior and social environment.)

642. The Bases of Social Functioning II. 1–5 hours.
Prerequisite: SW 641.
Continuation of Social Work 641 with emphasis on deviance and pathological behavior.

670. Social Welfare: Structure and Policies.
Social welfare as a social institution. Economic, political and social forces affecting stability and change in community social welfare systems. (Basic course in social welfare policy and services.)

701. Seminar in Social Work Practicum.
Knowledge and skill in social work methodology. Practicum experiences in a range of illustrative social work episodes-of-service through a Learning-Service Center. (Methods and practice.)

702. Seminar in Social Work Practicum.
Prerequisite: SW 701.
Continuation of Social Work 701.

703. Seminar in Social Work Practice.
Prerequisite: SW 702.
Continuation of SW 701.

732. Methods and Procedures in Assessing Community Social Welfare Needs. 1–5 hours.
Basic techniques in surveying social welfare needs in the community. Descriptive statistics. Introduction to sampling.

740. Introduction to Social Casework. 1–5 hours.
Casework as a method of social work practice. Basic elements in establishing and maintaining the professional relationship. Impact upon family functioning. Influence of agency setting.

741. Introduction to Social Work Methods. 1–5 hours.
Prerequisite: SW 600 or equivalent or permission.
Current developments in the application of various social work methods to types of problems encountered in social work practice.

742. Introduction to Social Work Methods II. 1–5 hours.
Prerequisite: SW 741.
Continuation of SW 741.

744. Casework with Children and Families. 1–5 hours.
Prerequisite: SW 740, 741.
Intensive examination of the social casework process with a special emphasis on children in their families.

750. Principles of Social Group Work. 1–5 hours.
Prerequisite: SW 741 or equivalent or permission.
Introduction to work with groups in various settings: the community center, the hospital, the mental health center. Relationship to community economic improvement programs, recreation and informal education.

770. Principles of Social Work Administration. 1–5 hours.
Prerequisite: SW 740 or equivalent or permission.
Introduction to administration of social agency programs. Departmental coordination and function. Boards and committees.

780. Law and Social Work. 1–5 hours.
Legal implications of social work practice, and legal controls over social work practice and operation of social agencies.

800. Professional Responsibility in Social Work.
Prerequisite: SW 670 or equivalent.
Nature and scope of social work, characteristics of the profession, values and ethics of the profession, implications to the profession of various current issues. Role and authority of the social worker. Example: Seminar in Racism and its Implication to Social Work.

801. Seminar in Social Policy. 1–4 hours.
Prerequisite: SW 800.
Current issues and problems in social welfare.

803. Seminar in Social Welfare Policy and Services. 1–10 hours.
A study of the dynamics of social welfare systems. Economic, political, social, historical forces affecting program content, organization, and administration of social welfare as a social institution. Example: Seminar in the Health Delivery System: A Presentation of the Health "Crisis" in the United States.

804. Seminar in Social Welfare Policy and Services. 1–10 hours.
Prerequisite: SW 803.
Social welfare decision-making, systems change, the legislative process, social policy and execution, and strategies and tactics employed to influence policy making. Example: Seminar in Social Systems Change.

805. Seminar in Contemporary Issues in Social Welfare Planning.
Current issues and problems in social welfare.

Example: Seminar in Delinquency. (Social welfare policy and services.)

806. Seminar in Comparative Social Welfare Systems.
History of social welfare development. Characteristics of the social agency as an administrative organization for meeting social problems. Example: Seminar in Programs Designed to Combat Poverty. (Social welfare policy and services.)

815. Perspectives in Social Welfare History.
Development of modern social services in Western society from earliest beginnings to the present. Changing philosophies of social welfare.

820A–G. Seminar in Selected Aspects of Social Welfare Policy and Services. 1–5 hours each.
Prerequisite: SW 803 or permission.
Intensive examination of particular aspects of social policy and services in modern American communities:

A. Economic Assistance.
B. Families and Children.
C. Corrections.
D. Medical and Rehabilitation Services.
E. School Social Services.
F. Mental Retardation.
G. Aging.

831. Logic of Professional Judgments in Social Work. 2 hours.
Introduction to research methodology with specific reference to the logic of study, diagnosis, and treatment in social work.

832. Social Work Research. 1–10 hours.
Research methodology relevant to social work. The formal rules of scientific inquiry. The canons governing the gathering, evaluation and interpretation of data. Example: Seminar in Analysis of Current Social Work Research.

832B. Social Work Research. 1–5 hours.
Readings course for the independent researching of a social welfare program under the direction of a faculty member.

841. Seminar in Personality Development. 1–10 hours.
Various theories of personality development which emphasize cognitive, psychological, social and biological concepts. Example: Seminar in Ego Psychology. (Human behavior and social environment.)

842. Seminar on Human Behavior—Individual Development. 1–10 hours.
Biological, psychological and social factors influencing processes by which individuals cope with change and maintain their social functioning. Example: Seminar in Early Childhood Development.

843. Seminar in Family Dynamics.
Family structure and dynamics through various stages in the developmental cycle, in response to both "normal hazards" of everyday living and special circumstances. The family being seen as a matrix for individual development.

844. Seminar on Social Structure and Individual Social Functioning.
An examination of certain exigencies in the environment to which the human personality is subjected. The implications for individual social functioning of the redefinition of social roles within a constant changing environment.

845. Seminar in Social Determinants on Family or Group Social Functioning.
The impingement of external factors, or the larger social systems of the community, such as schools, employment, agencies, churches or events like war, disasters or accidents on the family or the group.

846. Seminar in Culture and/or Social Class Influence on Social Functioning.
This seminar examines culture and social class as variables affecting the functioning of individuals and family groups. Social stratification and associated value patterns as related to cultures such as American Indians, Blacks, Orientals, Spanish speaking as well as white ethnic groups are discussed and compared.

847. Seminar in Physical Determinants of Individual Behavior.
The influence of physical factors on individual behavior including physical development, physical handicaps, terminal illness, amputations and surgery. The meaning of illness to the individual and/or to his family.

848. Seminar in Dynamics of Mental Illness.

891. Curriculum Development in Undergraduate Social Welfare Education.
Patterns and problems in pre-professional curriculum construction. Formulation and assessment of educational objectives. Principles of continuity, progression and integration in curriculum structure to meet individual student interest and career aspirations.

901. Degree Period Practicum. 5–15 hours.
Prerequisite: Admission to graduate standing.
Orientation to community and to agency. Beginning work with clients.

902. Degree Period Practicum. 5–15 hours.
Prerequisite: SW 901.
Beginning use of self through the social casework method in helping clients and their families with problems affecting social functioning.

903. Degree Period Practicum. 5–20 hours.
Prerequisite: Seminar in appropriate social work method.
Further development of skill in use of self through one (or two) of the social work methods in helping clients and their families, groups, and communities with problems affecting individual social functioning.

904. Degree Period Practicum.
Prerequisite: SW 903.
Continuation of Social Work 903.

905. Social Work Education Practicum.
Individually structured participation in a variety of educational roles: curriculum design, coordination, class and field teaching.

921. Research Problem. 1–10 hours.
Prerequisite: SW 832 or equivalent.
A written report on a problem in social work.

930. Thesis in Social Work. 5–50 hours.

941. Seminar in Social Work Supervision.
Prerequisite: Admission to graduate standing.
Introduction to social work method theory. Normative bases. Generic base and processes all social work methods share. Essentials of the social casework method.

942. Social Work Intervention.
Prerequisite: SW 941.
Continuation of Social Work 941. The casework process and worker-client interaction. Focus on the family. Essentials of the social group work method.

943. Seminar in Treatment Approach with Individuals.
Prerequisite: SW 902 and 942.
Continuation of SW 942. Broadening and deepening of consideration of both the social casework and social group work methods. Community matrix and supports. Method of choice. Treatment evaluation and termination.

944. Seminar Treatment Approach with Families.
Prerequisite: SW 902, 943, or equivalent and/or permission.
Intensive consideration of the social casework method in achieving professional goals. Focus on diagnosis and treatment strategies. Interaction of client, family and community in the casework process.

945. Seminar in Marital Counseling Approaches.
Prerequisite: SW 904 and 944.
Analysis of selected problems including those encountered by student during field instruction. Differential aspects of treatment. Emerging trends in theory and practice.

953. Foundations of Social Group Work.
Prerequisite: SW 941 and 942 or equivalent.
Study of the social group work method and its present applications, particularly in meeting normal developmental needs. Emphasis upon the community or neighborhood center.

954. Seminar in Treatment Groups.
Prerequisite: SW 902 and 943 or equivalent and/or permission.
Intensive analysis of social group work method in achieving professional goals. Focus on diagnosis and treatment strategies. Tactics of professional intervention in the group process.

955. Seminar in Social Group Work.
Prerequisite: SW 904 and 954.
Analysis of selected problems, including those encountered by student during field instruction. Differential aspects of treatment. Emerging trends in theory and practice.

963. Community Organization Theory.
Prerequisite: SW 941 and 942 or equivalent and/or permission.
Community organization as method and process in social work practice. Social welfare planning and coordination. Voluntary and tax-supported services.

964. Community Organization Practice.
Prerequisite: SW 903 and 943 or equivalent and/or permission.
Intensive analysis of the community organization method in achieving professional goals. Focus on community study and planning. Professional role with community committees and representation. Coordination and raising standards of service.

965. Seminar in Community Organization and Administration. 1–10 hours.
Prerequisite: SW 904 and 964.
Analysis of selected problems, including those encountered by the student in field instruction. Differential aspects of the community organization method. Emerging trends of theory and practice.

973. Seminar in Social Work Administration and Supervision. 1–10 hours.
Prerequisite: SW 941 and 942 or equivalent.
Social work administration as method and process in social work practice. Intra-agency planning and coordination in program execution.

974. Seminar Social Work Administration.
Intensive analysis of social work administration in achieving professional goals, focusing on agency dynamics and program strategies. Example: Seminar in Social Work Administration.

975. Seminar in Social Work Administration, Supervision and Consultation. 1–10 hours.

Administration, supervision and consultation within the framework of agency processes. Example: Seminar in Social Welfare Administrative, Supervision and Consultation.

979. Seminar in Social Work Supervision and Consultation. 1–10 hours.
Supervision and consultation as administrative and professional processes; enlarging worker skills and understanding within the framework of agency program and processes.

980. Theory and Practice of Social Work Consultation. 1–5 hours.
Examination and investigation of the theory and practice of consultation as used in social work, mental health, and other community service agencies. Focus aimed at purpose, issues in process, reporting, and evaluation.

991. Teaching Methods in Undergraduate Social Work Education.
Methodological patterns and issues in pre-professional social work education. Theories of learning and use of media. Cognitive, affective, and normative dimensions in pre-professional learning. Measures of student progress and the educational planning process.

SOCIOLOGY (SOC)

Robert A. Ellis
(Baldwin Hall, North Campus)

Doctoral language requirement: one language.

The department offers programs leading to the degrees Master of Arts and Doctor of Philosophy in sociology and also, in conjunction with the College of Education, the degree of Doctor of Eduction in the sociology of education. Specialized study is provided in the areas of methodology, the community, deviance social organization, demography, marriage/family, occupations/professions, social psychology, social stratification/mobility, rural sociology, and the sociology of education. The department has cooperative programs with the Institute of Community and Area Development, the Institute of Government, the College of Education and the College of Agriculture. Research facilities include the Demographic Research and Training Center, the Institute for Behavioral Research and the University Computer Center.

Unless otherwise stated, all graduate courses in sociology must be preceded by Sociology 105 and two advanced courses in sociology or related subjects.

601. Research Techniques in Small Groups. (Conger, Crumrine)
This course is designed to familiarize students with methods and techniques peculiar to small group research. Particular emphasis will be given to the use of Bales' modern methods categories for interaction process analysis. The class will replicate several of the classic experiments in small group research.

602. Structure and Functioning of American Society with Emphasis on Black Structure.
Prerequisite: SOC 105 or consent of instructor. A functional analysis of black institutions in relation to contemporary society.

607. Juvenile Delinquency. (Conger, Dean)
A detailed analysis of the nature, extent, and factors related to juvenile deviancy and delinquency with special emphasis on the juvenile justice system.

609. Social Change. (Wallis)
The social process of social change; causes, types and theories of change.

610. Sociology of Medicine. (Linden)
A sociological analysis of (1) the recruitment and professionalization of medical and nursing students, (2) the role of the doctor, (3) the organization and functions of the contemporary general hospital, (4) the mental hospital as a total institution, (5) the impact of third-party payments on medical institutions, and (6) the social and cultural factors in the epidemiology and treatment of organic lesions and mental illness.

611. Social Organization. (Bates)
The study of a general model of the social system and the development of a consistent set of theories concerning the structure and process of groups and such complex systems of behavior as organizations, communities and societies.

614. Sociology of Mental Disorders.
An exploration of the concepts and methods in the area of social psychiatry, with specific examination of the nature and sociological correlates of schizophrenia, psychoneuroses, the addictions, and psychosomatic disorders.

621. Early Social Thought. (Kelley)
A survey of social thought from Hammurabi to Comte. This course affords an introduction to social thought prior to the emergence of the modern social sciences.

622. Development of Sociological Theory.
(Jedlicka, Kelley, Robinson)
A survey of some of the most important systems in the development of sociological theory.

627. Personality and Social Structure.
(Balkwell, Cooper, Crumrine, Kelley, Robinson)
Foundations and development of personality; mechanisms of integration and adjustment; roles of culture, groups and language; concepts of self; types and theories of personality; deviant personalities.

629. Sociology of Religion. (Balswick)
An overview of religion as a social institution. The organization of religious groups, the integrative function of religion in social systems, and the influence of religious group membership on behavior in other institutional areas will receive special emphasis.

631. Rural Social Systems. (Miller)
A study of socioeconomic aspects of agriculture and of conditions and movements in rural population with consideration of rural, social elements and agencies, rural-urban relations, and American agricultural institutions.

632. The Sociology of Urban Life. (Miller)
Development of the city as a social phenomenon in the modern world. Analysis of urban trends, characteristics, functions and social organization. Sociological elements in urban planning, housing and metropolitan dominance, and growth patterns in new centers of urbanization.

633. Population Theory and Problems.
(Belcher, Jedlicka, Lee, Tarver)
Theory and dynamics of population growth; population pressure; migration; composition; differential fertility; theories of the quality and optimum population; economic and social aspects of our population.

634. Social Control. (Cooper)
A study of social techniques by which conformity to norms and behavior expectations is produced and maintained within society.

635. The Community. (Crumrine, Miller, Nix, Wallis)
A study of the community as a unit of social organization. Contemporary trends in community organization and planning.

637. Race Relations in the United States.
(Jedlicka, Robinson)
An examination of the social problems associated with race and minority relations in contemporary American Society.

642. American Stratification System. (Ellis, Horan, Kelley)
A systematic analysis of the nature of social status systems, including caste, estate, and class, and an examination of the form stratification differences taken in the United States.

643. The Mobility Experience. (Ellis, Horan, Kelley)
Prerequisite: SOC 642.
Examination of theories and findings on the structure of opportunities in society; the factors and processes that contribute to social mobility; and the social and personal consequences resulting from changes in status.

651. Human Ecology and Social Structure.
(Belcher)
A description of the ecological processes and the effects of technological change upon them. The study of the impact of this major branch of sociological theory upon recent developments in sociology.

652. Fertility of the Population. (Belcher, Lee)
Levels, trends and differentials in fertility among various population groups; techniques and problems of measurement; and the social, psychological and biological aspects of human fertility.

653. Mortality of the Population. (Lee)
Study of the levels, trends, and differentials of mortality and morbidity among various population groups. Special attention will be given to the

role of social factors in health programs designed to reduce mortality.

654. Migration of the Population. (Lee, Tarver)
Study of internal and international population, analysis of migration streams, and techniques for analyzing migration rates. Also short-distance residential mobility will be examined.

656. Techniques of Population Analysis. (Lee, Tarver)
Techniques for analyzing the composition of the population; constructing life tables; measuring vital processes; and estimating population and migration.

657. Population Estimates and Projections. (Tarver)
A study of the most widely used procedures for estimating and projecting the population of states, counties, and other local areas. Evaluation of the accuracy of different estimation and projection methods.

660. Survey Research. (Cooper)
Prerequisite: SOC 420 or equivalent.
Objectives, techniques, and uses of the sample survey in social research as exemplified in public opinion studies, attitude and information surveys, and evaluation of organizational and community programs.

661. (CFD) The Family.

664. Advanced Social Psychology. (Balkwell, Crumrine, Robinson)
Development and importance of language and communication in social behavior; concepts and methods of studying decision making; the role of motivation, frustration, and conflict in social processes.

665. Sociology of Aging. (Dean)
An examination of the sociological approaches to aging, the status of older people, their roles in the community and society, demographic aspects of aging, and their interrelationships with society and social institutions.

671. Philosophy of Social Sciences. (Horan, Robinson)
A study of the methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

680. Industrial Sociology. (Beck)
A study of human relations in the industrial setting and the relationship of industrialization and the work environment to the worker, the community and the larger society.

681. Criminology. (Dean, Eckenrode)
The study of the nature, extent, and factors related to criminal behavior. Focus will be on the criminal justice system; the police, the judiciary and corrections (probation, imprisonment, parole, work release, and half-way houses.)

685. Sociology of Occupations. (Garbin)
A comparative study of work positions and roles in modern American society with emphasis given to such topics as occupational choice, socialization, worker adjustment, prestige, and mobility.

695. Large Organizations. (Cooper, Shull)
Major approaches to the study of large organizations; theories of bureaucratic structure; relationships of personality to formal and informal structure.

702. Community Development. (Miller, Nix)
A study of approaches, principles, techniques, and programs of comprehensive community development. Offered winter quarter.

715. Seminar in Corrections. (Eckenrode)
Review of principles of correction; field observation and analysis of current practices; evaluation of observations and development of career potential in various aspects of criminal justice administration.

716. Special Projects in Applied Criminology. (Eckenrode)
A study in depth, beyond the level of survey, of the most important literature of theories and practices in criminal justice. The course will provide a critical analysis of this literature.

721. Group Dynamics. (Crumrine)
A review of the development of research on processes in the small face-to-face group, with emphasis on motivational forces involved. Primary focus is to be on the theory, but relationships to group leadership and management in a variety of settings will be demonstrated.

728. Sociology of Education. (Ellis, Kelly)
Social perspectives on education: the society, the community, and the school.

759. Community Reconnaissance Methods. (Miller)
Prerequisite: SOC 435 or equivalent.
A study and application of methods of research in community organization for community development programs. The application involves an actual community study including schedule preparation, field interviews, analysis of data and report writing. Offered spring quarter.

800. Special Topics in Sociology.
Opportunity to do intensive study on an individual basis in the field of the graduate student's major interest.

820, 821, 822. Seminar in Sociological Theory and Research. 5 hours each.
A study of theoretical and methodological problems in substantive areas of sociology. Topics will vary with interests of the students and instructors.

831. Theory I: Current Trends in Sociological Theory. (Robinson)
A systematic analysis of the trends and developments in sociological theory since about 1950. Particular emphasis is placed on the current stage of sociological theory and its relationship to empirical research.

832. Theories of Social Organization. (Bates, Beck, Shull)
Prerequisite: SOC 831 or permission of instructor.
A comprehensive analysis and review is made of theories and research pertaining to the structure or organization of human social system. Consideration is given to the structure of groups, organizations, communities, societies, social institutions and systems of power and social rank.

833. Theories of Social Stratification. (Ellis, Horan)
Prerequisite: SOC 831 or permission of instructor.
A critical examination of the major theoretical approaches developed for understanding and explaining societal stratification and social mobility. Consideration will be given to the writings of Marx, Veblen, Mosca, Weber, Parsons, Sorokin, Davis, Moore, Dahrendorf and Lenski. The works of other theorists will be considered in accordance with student interests.

835. Theories of Deviance. (Conger)
Prerequisite: SOC 831 or permission of instructor.
A systematic and critical analysis of the major sociological theories on deviance, including an examination of both traditional and current theories. Consideration will be given to conceptualizations of deviance, the normative and labeling theories of deviance, the association between deviance theories and research methods used to study deviance, and the relationship of deviance theories with general sociological theories.

836. Theories of Demography. (Belcher, Lee, Tarver)
Prerequisite: SOC 831 or permission of instructor.
Presentation and evaluation of general theories of demography, both micro and macro-analytical. The major emphasis is upon contemporary sociological theories.

837. (PSY) Theories of Social Psychology. (Balkwell, Crumrine, Robinson)
Prerequisite: SOC 831 or permission of instructor.
An advanced survey of theoretical and conceptual frames of reference that contribute to our knowledge of social psychology including consideration of such theories as cognitive consistency, social exchange, symbolic interaction, role theory, group process and collective behavior.

845. Theory III: Constructing Sociological Theories and Models. (Balkwell, Horan)
A study of the nature and testing of scientific theory, with special reference to theory in sociology. The characteristics of formal axiomatic systems and their use as a basis for empirical theory will be discussed. Problems of deducing and testing theoretical propositions will be a central concern. Existing formal or semiformal theories in a selected area of sociology will be presented and critically appraised with respect to empirical adequacy, falsifiability, predictive and explanatory power, parsimony, and other criteria.

853. Methods I: Non-Experimental Methods of Data Collection. (Ellis, Jedlicka)
Principles of data collection; questionnaire and interview schedule construction; observational methods; use of secondary sources; problems of reliability and validity.

854. Methods II: The Design of Sociological Inquiry. (Beck)
Prerequisite: SOC 853.
The course stresses the following: the functions of concepts, hypotheses, and theories for an empirical discipline; the operationalizing of theoretical variables; the principles of research design and problems of inference; and the relationship between research and theory.

871. (CFD) Comparative Family Systems.

895. (CFD) Seminar in Family Development.

900. Methods III: Research Practicum. 5–10 hours.
Prerequisite: SOC 854.
Students will engage in an apprenticeship research program with a departmental faculty member to gain firsthand experience in conducting sociological research. Each student is expected to formulate a researchable problem, design an appropriate method for solving the problem, analyze and interpret the data, and prepare a written report. Registration is open only to doctoral students in sociology.

930. Thesis. 5–50 hours.

SPEECH COMMUNICATION (SPC)

Dwight L. Freshley
(Geography-Geology-Speech Building, South Campus)

The Master of Arts in speech communication requires 40 hours, plus thesis.

The Department of Speech Communication also encourages interdisciplinary programs. With the approval of his advisor, a student studying speech communication may take courses from such related areas as psychology, statistics, radio-television, journalism, education, history, political science, sociology, management, and business.

655. Rhetorical Composition and Criticism. 5 hours. Two double periods weekly. (Logue)
Prerequisite: Two senior division courses in speech communication or English.
An advanced course dealing with the study of rhetorical theory and criticism.

656. Group Discussion and Conference Leadership. 5 hours. Two double periods weekly. (Leathers)
Prerequisite: Two senior division courses in speech communication, or business administration or education or consent of the instructor.
A study of the theory and techniques of group discussion with emphasis on current experimentation and research. Conference planning and participation and conference leadership techniques are included.

659. Foundations of Rhetorical Theory. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in speech communication or English.
A study of the origin and development of rhetorical theory from ancient to modern times.

662. Communication Strategies in the Courtroom. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
The role of communication in the legal process. Students will observe actual and simulated legal proceedings.

663. Communication Strategies in Government. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
The role of communication in the operation of government; strategies of government agencies' communication with the public.

664. Communication Strategies in Religion. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
The communication strategies of organized religions in self-maintenance and in communicating religious thought and belief to adherents.

665. Communication Strategies in Political Campaigns. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
An investigation of the kinds and quality of political communication with emphasis on historical and contemporary case studies.

666. (PSY) Psychology of Speech Communication. 5 hours. Two double periods weekly. (Freshley, Gruner)
Prerequisite: Two senior division courses in speech communication, psychology, or English.
A study of speech as a psychological phenomenon with consideration of the use of symbols, the speech personality, emotional reactions and mental processes in speech, and psychological studies of language and vocal and visual symbolism.

667. (MAN) Interviewing. 5 hours. Two double periods weekly. (Lahiff)
Prerequisite: Graduate standing.
A study of modern communication theory and its application to interview situations.

669. Communication Strategies in Social Movement. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
Communication in historical and contemporary movements such as the Populist, labor, peace, and women's liberation.

672. Communication Strategies in International Affairs. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
Communication among nations; emphasis on case studies such as the U.N., the Cuban Missile Crisis, etc.

673. Classical Rhetoric. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in En-

glish, classics, or speech communication.
A study of the development of classical rhetoric in the Greek and Roman periods; Plato to Quintilian.

678. Modern Rhetorical Theory. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in social science, journalism, or related areas.
A study of the development of rhetorical theory from 1700 to the present.

720. (JRL) Communication Theory. 5 hours. Two double periods weekly. (Leathers)
Prerequisite: Two senior division courses in sociology, psychology or speech communication, or JRL 101 and 203.
This course familiarizes the student with the fundamental nature of and problems in interpersonal and group communication. Communication is studied from the scientific perspective with emphasis on factors that measurably affect quality of communication. Students analyze communication situations of their own choice.

722. (JRL) Mass Communication and Persuasion.

750. Teaching of Debate. 5 hours. Two double periods weekly. (Gross)
Prerequisite: Two or more senior division courses in education, speech, communication.
Principles of argumentation and debate with emphasis on administration of the secondary school debate program.

751. Seminar in Quantitative Research in Speech Communication. 5 hours. Two double periods weekly. (Gruner)
Prerequisite: STA 200 and two senior division courses in speech communication, education, sociology, psychology, or consent of instructor.
Analysis of studies, design and execution of projects in communication.

793. Speech Communication for the Elementary Teacher. (Morrison)
Prerequisite: Speech 108 and two senior division courses in education or speech communication.
A study of the various speech activities for elementary school children. Voice and diction for the elementary teacher's speech improvement.

851. Introduction to Graduate Study in Speech Communication. 5 hours. Two double periods weekly.
Prerequisite: Two senior division courses in speech communication or English (Linguistics).
A survey of the field of speech communication including types of research studies, bibliographical resources and techniques involved in the historical, descriptive, and experimental methods.

855. (LIN) Nature of Oral Language. 5 hours. Two double periods weekly. (Gruner)
Prerequisite: Graduate standing.
A study of the meaning and uses of word symbols and their relation to behavior and speech communication problems.

856. (MAN) Seminar in Group Discussion. 5 hours. One evening quadruple period meeting weekly.
Prerequisite: Graduate standing.
Intensive examination of research in small group communication with major emphasis of those variables which exert greatest influence. Course includes consideration of recent research findings as well as those studies recognized as central to the area of investigation.

896. (MAN) Seminar in Communication and Conflict. 5 hours. One evening quadruple period meeting weekly.
Prerequisite: Graduate standing.
A study of communication in situations of conflict.
Communication problems in such areas as race relations, campus confrontation, and labor-management disputes will be analyzed.

900. Research Seminar and Special Problems in Speech Communication.
Prerequisite: Two graduate courses in speech communication.
Individual directed study of research under supervision on research problems in speech.

930. Thesis. 5–50 hours.

996. (MAN) Seminar in Organizational Communication.

STATISTICS AND COMPUTER SCIENCE (STA)

Carl F. Kossack

(Boyd Graduate Studies Building, South Campus)

Doctoral language requirement: one language.

The graduate program in statistics includes a Master of Science degree with options in applied statistics and computer sciences and a Doctor of Philosophy degree in statistics. Graduate students in the department may expect to have assignments that include teaching, applied research and consulting experience in addition to their course work and the basic research experience involved in completing their dissertation. A close association exists between the University Computer Center and the Department of Statistics and thus the computational facilities of the Center are available to graduate students for the more complex or lengthy computations. In addition the department maintains computational and data preparation laboratories, including a CDC 1830 and an IBM 2250 console linkage to the IBM 360 system. Formal statistical research activities are coordinated through the Institute of Statistics of the University supported by research grants.

Courses in advanced calculus and linear algebra are required as prerequisites for all graduate students in statistics.

621. Statistical Methods I.
Prerequisite: Credit for or exemption from MAT 100.
Basic concepts of statistical models, sampling, variability in sample data, distribution, estimation of parameters, simple tests of significance, t-tests, analysis of variance, chi-square tests, and simple regression and correlation. Special sections for social scientists and biological scientists are provided. These sections are designated in the schedule of classes.

622. Statistical Methods II.
Prerequisite: STA 621.
Analysis of variance with multiple classification, covariance, multiple regression, multiple and partial correlation, elements of experimental design.

624. Sampling and Survey Methods.
Prerequisite: STA 621.
The design of sample survey, biases, variances and cost estimators. Comparison of simple random sampling, ratio estimation, stratification, multistage sampling.

633. Introduction to Information Retrieval.
Prerequisite: STA 431, MAT 254; corequisite: STA 432.
Formatted and unformatted files. File structuring. Retrieval programs for encoded and English text. List processing systems. Automatic translation. Computer-assisted instruction.

634. Numerical Methods for Scientific Computation I.
Prerequisite: STA 431, MAT 256; corequisite: STA 432, MAT 403.
Principles for writing subroutines for mathematical computer programs including series solutions, continued fractions, numerical quadrature, and interpolation.

635. Numerical Methods for Scientific Computation II. (Bargmann)
Prerequisite: STA 634; corequisite: MAT 404.
Subroutines for general quadratures, differential equation, matrix calculations, conversational and real-time scientific programs.

636. Statistical Computation.
Prerequisite: STA 622, 431.
Computer programs for data analysis, experimental design, discriminant analysis, factor analysis, statistical distributions.

637. Computer Programming for Commercial Applications.
Prerequisite: STA 431, MAT 235.
COBOL and assembler language programming with applications in payroll, balance sheets, inventory control, warehousing, and scheduling problems.

651. Statistical Theory.
Prerequisite: MAT 255 and an introductory course in statistics.
An introductory course in statistical theory.

652. Statistical Theory II.
Prerequisite: STA 651.
Continuation of STA 651.
Courses 700–701–703 are undergraduate/graduate service courses. Graduate credit for these is not available to majors in statistics or computer sciences, but only to non-majors with the consent of their major departments.

700. Programming for Electronic Digital Computers.
Prerequisite: Credit for or exemption from MAT 100.
This course is intended to prepare students to use the electronic computers of the University of Georgia Computer Center. FORTRAN type programming.

701. Scientific Programming.
Prerequisite: STA 700 and two senior division courses in mathematics or statistics or consent of instructor.
Assembler language, machine language, and systems programming for scientific application.

703. Commercial Data Processing.
Prerequisite: MAT 204.
Programming electronic digital computers for commercial and business applications using the COBOL language.

802. Advanced Numerical Methods.
Prerequisite: MAT 604 and 635.
Selected topics of numerical analysis methods for statistics and computer science.

803. Advanced Scientific Programming. (Bargmann)
Prerequisite: STA 635 or equivalent.
Scientific programming systems, advanced concepts in computation, error propagation, simulation.

804. Process Control and Information Systems. (Bargmann, Kossack)
Prerequisite: STA 634.
Information retrieval, econometric models, management information systems, process evaluation and control.

823. Statistical Analysis.
Prerequisite: STA 622 and 652.
Sequential methods, non-parametric methods, non-linear estimation, mixed models.

824. Sampling and Survey Theory. (Kossack)
Prerequisite: STA 624 and 652.
Selected topics in sampling and survey theory at an advanced level.

825. Multivariate Methods. (Bargmann)
Prerequisite: STA 622.
Multivariate tests of hypotheses, confidence regions, multivariate analysis of variance, discriminatory analysis, factor analysis, correlations.

826. Linear Statistical Analysis. (Bargmann)
Prerequisite: STA 622 and 651.
Analytical theory of least squares, general linear model, application to designs.

829. Advanced Experimental Design.
Prequisite: STA 622 and 651.
Selected topics in the field of experimental design.

830. Multivariate Analysis. (Bargmann)
Prerequisite: STA 854 and 825.
Selected topics in the theory of multivariate analysis at an advanced level.

853. Mathematical Statistics I.
Prerequisite: STA 652.
Advanced probability theory, limit theorems, distribution theory, multinormal distribution, decision theory, theory of estimation, confidence regions, theory of tests of hypotheses.

854. Mathematical Statistics II.
Prerequisite: STA 853.
Selected topics in tests of hypotheses, sequential analysis and decision theory, theory of estimation at an advanced level.

856. Statistical Distribution Theory and Nonparametric Statistics. (Shenton)
Prerequisite: STA 854.
Selected topics from the theory of statistical distributions. Study of tests of hypotheses which may be made without specification of the underlying distribution.

857. Statistical Decision Theory.
Prerequisite: STA 853.
Game theory and decision theory, the main theorems of decision theory, conjugate prior distributions and limiting posterior distributions, sequential decision problems, empirical bayes method of estimation.

870. Stochastic Processes.
Prerequisite: Consent of instructor.
Discrete and continuous Markov processes, birth and death processes, diffusion theory and power spectra.

890. Advanced Problems in Statistics.
Prerequisite: Consent of instructor.
Selected topics concerning recent developments in statistics.

891. Statistical Seminar.
Prerequisite: Consent of instructor.

930. Thesis. 5–50 hours.

VETERINARY ANATOMY AND RADIOLOGY (VAH)

Robert E. Lewis
(Veterinary Building, South Campus)

Veterinary anatomy is limited at the present time to obtaining the M.S. degree. The program is available to all qualified students holding professional degrees in the healing arts as well as to graduate students having a strong biological background. Programs of study are available in the general area of microscopic and gross anatomy, embryology, neuroanatomy, electromicroscopy, and radiology. All programs are strongly slanted toward a comparative approach and students are not limited to a particular species for research purposes. A limited number of post-doctoral research assistantships are available and other financial support may be sought through the Graduate School.

Students interested in comparative anatomical study programs should contact this department directly to determine specific requirements.

602. (VPP) Veterinary Hematology.
Prerequisite: ZOO 357 or equivalent and one related senior division course. Open to all students of graduate standing who meet the prerequisites.
A lecture and laboratory course designed to acquaint the student with proper identification of cell types found in peripheral blood and bone marrow of the various domestic animals. Emphasis is placed on various morphological and staining characteristics of the various cell types. Students are required to prepare and study peripheral blood and bone marrow smears in the various domestic animals. Periodic reports from current literature will also be required.

604–605–606. Histology and Embryology of the Domestic Animals. 5 hours each.
A three quarter sequence designed to acquaint the student with normal microscopic anatomy of domestic animals. The first quarter is devoted to a detailed study of basic tissues, basic embryology and neuroanatomy. The following two quarters are devoted to the histology and teratology of the various organ systems. Credit will be given for an individual quarter's work.

607. Neuroanatomy of Domestic Animals. (Munnell)
Prerequisite: VAH 411, or consent of instructor. Open to all qualified graduate or undergraduate students in the biological sciences.
A lecture, laboratory and seminar course of the gross, microscopic and ultrastructural aspects of neuroanatomy presented from a comparative viewpoint using the dog as the basic animal.

608. Avian Comparative Anatomy.
Prerequisite: ZOO 356 and 357 or equivalent courses.
A histological study of tissues and organs of domestic fowls compared with those of mammals. Conducted as a lecture, laboratory, seminar sequence in which the students are required to present discussions on current comparative anatomical subjects.

614. Surgical Anatomy of the Canine.
Prerequisite: VAH 411 and consent of instructor. Open to all qualified graduate or undergraduate students in veterinary medicine.
A combined lecture and laboratory course designed to acquaint the student with practical and functional applications of the gross anatomy involved in surgical procedures on the various organ systems of the body.

680. Radiology. 4 hours. (Lewis, Thrall)
The principles of radiography; darkroom, x-ray and fluoroscopic techniques, radiation health physics and protection; roentgen signs of various body systems related to etiopathogenesis of various diseases; and introduction to the therapeutic use of x-radiation and nuclear medicine.

801. Problems in Veterinary Anatomy. 1–5 hours.
Prerequisite: ZOO 356 or equivalent and one other senior division course in biological sciences meeting the course prerequisites.
Designed to allow graduate students the opportunity to explore, under supervision, anatomical problems of their choice. These may be in areas of gross or microscopic anatomy.

803. Advanced Veterinary Histology.
Prerequisite: VAH 404, 405, 406 or equivalent and consent of instructor. Open to all qualified graduate students in any area of the biological sciences.
A lecture, laboratory and seminar course to acquaint the student with histological variations in the structure of organ systems of domestic ani-

mals. Functional aspects based on comparative morphology will be stressed.

804. Advanced Morphogenesis: Normal and Anomalous. (Blair)
Prerequisite: Permission of instructor.
Lectures, laboratories, and weekly seminars on the normal and abnormal dvelopment of the selected systems in the cat, dog, calf embryos and feti.

805. Advanced Radiographic Anatomy. (Lewis)
Prerequisite: ZOO 356 or VAH 480 or equivalent.
A series of lectures, discussion seminars and laboratory exercises designed to teach methods of contrast radiography most commonly used in mammalian biological systems.

806. Advanced Morphogensis of the Cardiovascular Systems of Domestic Animals. (Blair)
Prerequisite: VAH 604 or 804 and permission of instructor.
A detailed study of the embryonic and fetal development of the heart, major arteries and major veins in selected animal forms.

810. Fine Structure of Animal Tissues. 5 hours. Three lectures and one 2-hour seminar-discussion period. (Munnell)
Prerequisite: VAH 404, 405, 406, or ZOO 357 or equivalent and permission of instructor.
A study of fine structural histology and special cytology of animal tissues and organs with particular emphasis on giving the student a basis for interpretation of electron micrographs. Cellular and extracellular morphologic specializations will be related to the function of the tissue or organ.

930. Thesis. 5–50 hours.

VETERINARY PARASITOLOGY (PAR)

William L. Hanson
(Veterinary Building, South Campus)

Graduate work leading to the M.S. and Ph.D. degrees in parasitology is offered by the department. A wide choice of potential student dissertation areas are available and include studies of the host specificity, morphogenesis, chemotherapy, and immunology of parasitic protozoa and helminths as well as various aspects of wildlife diseases.

Applicants for graduate study are accepted to begin at the beginning of any quarter. Prospective students who wish to work toward an advanced degree in parasitology are required to have either a professional degree in a medical science or a bachelor's degree in a biologicial science.

Prospective students desiring financial assistance should contact the department head well in advance of the time of entry into the Graduate School.

The language requirement for the doctoral degree is one language.

608. Veterinary Parasitology. 5 hours. Three lectures and two 2-hour laboratory periods. (Hanson, Prestwood, Roberson)
Included are studies on taxonomy, morphology, life history, pathologic manifestations, diagnosis and control of parasitic protozoa, helminths, and arthropods.

609. Veterinary Parasitology. 5 hours. Three lectures and two 2-hour laboratory periods. (Hanson, Prestwood, Roberson)
Included are studies on taxonomy, morphology, life history, pathologic manifestations, diagnosis and control of parasitic protozoa, helminths, and arthropods.

801. Pathology of Parasitic Diseases in Animals. 2–5 hours.
Prerequisite: PAR 608 and 609 or equivalent.
A study of the pathologic alterations produced in animals by parasites. The common parasitic disease of both birds and mammals will be studied.

Work will include diseases produced by helminths, protozoa, and arthropods.

803. (ZOO) Helminthology. 5 hours. One lecture and four 2-hour laboratory periods. (Prestwood, Damian)
Prerequisite: Consent of instructor.
Study of morphology, life histories, classification, and parasitic relationship of helminths.

804. Veterinary Nematology. 5 hours. Three 1-hour lectures and two 3-hour laboratory periods. (Prestwood)
Prerequisite: PAR 608 and 609 or equivalent.
Included will be detailed studies of the nematodes infecting domestic and laboratory animals. Emphasis will be on identification and biology of these nematodes.

805. Problems in Parasitology. 1–5 hours.
Prerequisite: PAR 608 and 609 or equivalent.
Detailed studies will be made of parasitic diseases of both birds and mammals. The nature of the studies will be determined somewhat by the student's major field of interest.

806. Technics in Experimental Parasitology. 5 hours. Two lectures and three 2-hour laboratory periods. (Hanson, Prestwood, Roberson)
Prerequisite: PAR 608 and 609 or equivalent.

824. (ZOO) Immunity to Animal Parasites. (Damian, Hanson)
Prerequisite: PAR 608 and 609 or equivalent and MMB 610 or equivalent.
Immunity to parasitic protozoa, helminths, and arthropods. *In vivo* as well as *in vitro* techniques will be utilized to demonstrate these principles and mechanisms.

830. (ENT, PS, ZOO, PAT) Seminar in Veterinary Parasitology. 1 hour.
Prerequisite: Graduate standing in veterinary medicine or a closely allied field.
Graduate students and staff members will regularly participate in the review and discussion of basic problems and parasitic diseases currently or potentially important in the field of veterinary medicine.

850. Diseases of Wildlife. (Hayes, Prestwood, Shotts)
Prerequisite: Permission of instructor.
The course is designed to give fundamental instruction in wildlife diseases. Emphasis will be placed on gross anatomy, necropsy procedures, gross and microscopic alterations of diseased tissues produced by bacterial, mycotic and viral agents.

851. Diseases of Wildlife. (Hayes, Prestwood, Shotts)
Prerequisite: PAR 850.
Major emphasis will be placed on fundamental concepts of toxicologic, nutritional and parasitologic diseases as they relate to public health, diseases of livestock and game management.

930. Thesis. 5–50 hours.

VETERINARY PATHOLOGY (VPP)

D. E. Tyler
(Veterinary Building, South Campus)

Graduate work leading to the M.S. and Ph.D. degrees in veterinary pathology is offered by the department. A wide choice of potential student dissertation areas are available and include elucidation of the eitology and pathogenesis of a variety of specific disease entities, studies in fine structural pathology, biochemical pathology and immunopathology.

Applicants for graduate study are accepted to begin at the beginning of any quarter. Prospective students are required to have a professional degree in a medical science.

Prospective students desiring financial assistance should contact the department head well in advance of the time of entry into the Graduate School.

The language requirement for the doctoral degree is one language.

602. (VAH) Veterinary Hematology.

603. Medical Photography. 5 hours. Three 1-hour lectures and two 3-hour laboratory periods.
Prerequisite: Permission of instructor.
Studies are made of technics dealing with gross specimen photography, macrophotography, and photomicrography. Special emphasis will be placed on production of prints for scientific publications.

615. Microscopic Pathology.
Prerequisite: VPP 427 or equivalent.
Studies are made of the basic microscopic alterations of tissue resulting from disease. Specific diseases of domestic animals will be used to illustrate these changes.

616. Necropsy Pathology. 1–5 hours.
Prerequisite: VPP 427 or equivalent.
Studies are made of the gross and microscopic alterations of tissues resulting from disease. Emphasis will be placed on the procedures of necropsy diagnosis of diseases of domestic animals.

625. General Animal Pathology.
Prerequisite: ZOO 357 or consent of instructor.
An introduction to pathology which treats with the basic responses of the body to disease. Emphasis will be placed on the dynamics of the disease process and the morphologic alterations which result.

802. Cellular Pathology. 3–5 hours.
Prerequisite: VPP 427 or equivalent.
Detailed study of the various responses of the body to disease processes. Emphasis will be placed on microscopic, fine structural and molecular changes.

803. Surgical Pathology and Oncology.
Prerequisite: VPP 802 or equivalent.
Studies made on the clinical indications for biopsy and the diagnosis of individual surgical specimens. Surgical specimens currently submitted will be studied as well as those from the large volume of cases on file in the department.

805. Problems in Veterinary Pathology. 2–5 hours.
Prerequisite: VPP 427 or equivalent.
Detailed studies will be made of disease problems of both birds and mammals. The nature of the studies will be determined somewhat by the student's major field of interest.

814, 815, 816. Seminar in Veterinary Pathology. 1 hour each.
Prerequisite: Graduate standing in veterinary medicine or a closely allied field.
Graduate students and staff members will regularly participate in the review and discussion of basic problems and diseases currently or potentially important in the field of veterinary medicine.

822. (AM) Microscopic Pathology of Poultry.
Prerequisite: VPP 425, 426, 427 or equivalent, or consent of instructor.
Detailed microscope studies will be made of avian tissues and the effects of specific diseases and their processes on them. A working knowledge of tissue processing and differential staining will be included. Detailed studies of gross and microscopic alterations of tissues, organs and systems of animals and birds which have received excessive or deficient nutritive elements.

830. Neuropathology.
Prerequisite: VPP 427 or equivalent.
Detailed macroscopic and microscopic study of the pathologic alterations resulting from viral, bacterial or mycotic invasions of the nervous system. Attention will also be directed toward alterations brought about by oncological processes.

832. Pathology of Laboratory Animals. 2–5 hours.
Prerequisite: VPP 427 or equivalent.
Detailed studies of the etiology, tissue alterations, both macroscopic and microscopic, and parasitic diseases of the common laboratory animals with emphasis on the pathologic alterations.

835. Experimental Pathology. 3–5 hours.
Prerequisite: VPP 425 or equivalent and BCH 602 or equivalent.
Emphasis will be placed on the study of disease by such techniques as cell fractionation, subcellular particle separation, enzyme purification and assay, molecular exclusion chromatography, polyacrylamide gel and electrophoresis.

930. Thesis. 5–50 hours.

ZOOLOGY (ZOO)

Peter E. Thompson
(Biological Sciences Building, Science Center)

The Department of Zoology offers M.S. and Ph.D. degrees. Requirements for the M.S. include 45 hours of course work: reading knowledge of one foreign language; satisfactory performance on written and oral examinations; and an acceptable thesis embodying original research in a specialized area. Requirements for the Ph.D. include a reading knowledge of one foreign language; satisfactory performance on written and oral examinations; and an acceptable dissertation. There are no required number of hours of course work for the doctorate.

Facilities for graduate training include campus laboratories equipped with modern instrumentation for controlled environment studies, electron microscopy, radioisotope studies, animal rooms, greenhouses, and an aquarium room. Available off-campus facilities include the Skidaway Institute of Oceanography, the Marine Institute at Sapelo Island, Savannah River Laboratory of Ecology within the AEC Savannah River Reservation, the Yerkes Primate Center in Atlanta, Georgia, and its field station at Lawrenceville, Georgia. The University's membership in Oak Ridge Associated Universities, the Organization for Tropical Studies and the Highlands Biological Station allows students access to the programs and facilities of these organizations.

602. Protozoology. 5 hours. Three lectures and two double laboratory periods. (Paulin)
Prerequisite: ZOO 225 or equivalent.
A study of the phylum Protozoa with emphasis on morphology, physiology, life histories and the role of protozoa in biological research.

603. Mammalogy. 5 hours. Three lectures and two double laboratory periods. (Provost)
Prerequisite: ZOO 226 or equivalent.
A study of the taxonomy, distribution, ecology, and evolution of mammals.

604. Herpetology. 5 hours. Three lectures and two double laboratory periods. (Gibbons)
Prerequisite: ZOO 226 or equivalent.
The evolution, ecology, behavior, structure and physiology of amphibians and reptiles.

605. Ichthyology. 5 hours. Three lectures and two double laboratory periods. (Scott)
Prerequisite: ZOO 226 and a senior division course in zoology.
A study of the taxonomy, distribution, ecology, and evolution of fishes with special reference to the marine and fresh-water fishes of eastern North America.

606. Ornithology. 5 hours. Two lectures and three double laboratory periods. (Avise)
Prerequisite: ZOO 226 or equivalent.
An introduction to the study of birds, emphasizing the identification, classification, life histories, and behavior of Georgia species.

607. Invertebrate Zoology I. 5 hours. One lecture and four double laboratory periods. (Thomas)
Prerequisite: Consent of instructor.
The morphology, taxonomy, phylogeny and general biology of the acoelomate and pseudocoelomate phyla.

608. Invertebrate Zoology II. 5 hours. One lecture and four double laboratory periods. (Thomas)
Prerequisite: ZOO 607 or consent of the instructor.
The morphology, taxonomy, phylogeny and general biology of coelomate phyla.

611. Cytogenetics. 5 hours. Three lectures and two double laboratory periods. (Case, Bryan)
Prerequisite: BIO 320 or equivalent.
The behavior of chromosomes and their relationship to genetic concepts.

612. Ecological Genetics. (Anderson)
Prerequisite: BIO 320 and 350.
Genetic diversity and variation in relation to the environment; the interplay between ecological and genetical processes within populations.

614. Population Genetics. (Anderson)
Prerequisite: BIO 320 and 350; and MAT 254.
Genetic agencies—mutation, selection, migration, drift, and others which shape the genetic structure of populations with emphasis on relevant mathematical theory.

615. Topics in Evolutionary Theory. (Avise)
Prerequisite: BIO 320 or 350; or consent of instructor.
Theory and data pertaining to evolution of genetic systems, molecular evolution, coevolution, evolution of social behavior.

622. Animal Physiology. 5 hours. Four lectures and one double laboratory period. (Taylor)
Prerequisite: ZOO 227 or BIO 380.
The physiology of neural and humoral regulatory mechanisms.

623. Animal Physiology. 5 hours. Four lectures and one double laboratory period. (Taylor)
Prerequisite: ZOO 227 or equivalent.
The physiology of nutrition, metabolism, circulation, transport, and excretional and environmental physiology.

624. Vertebrate Physiology. 5 hours. Four lectures and one double laboratory period. (Kent, Taylor)
Prerequisite: ZOO 227 or equivalent.
The physiology of vertebrate organ systems.

631. (FRS) Aquatic Environments.

650. Principles of Ecology.
Prerequisite: Undergraduate degree in physical, biological, social sciences or others leading into interdisciplinary ecology program.
A review of basic ecological principles with emphasis on the holistic concept of the totality of man and environment . . . especially as relevant to the problems of resources, population growth, agro-industrial development and pollution.

660. Marine Ecology. 5 hours. Three lectures and two double laboratory periods. (Glasser)
Prerequisite: BIO 350.
Ecological principles as exemplified by marine environments, organisms, populations, communities, and ecosystem.

672. Parasitology. 5 hours. Three lectures and two double laboratory periods. (Damian)
Prerequisite: ZOO 225.
A comparative study of internal parasites of man and the lower animals.

684. Animal Histology. 5 hours. Two lectures and three double laboratory periods. (Mattingly)
Prerequisite: ZOO 226 or equivalent.
A study of the tissue and their organization into organs and organ systems in animals.

685. Problems in Histology. 5 hours. Two lectures and three double laboratories.
Prerequisite: ZOO 362 and 484 or equivalent.
Involves the development of an analytical problem in histology and investigation of the problem with advanced techniques.

800. Ecological Energetics. 5 hours. Three lectures and one double laboratory period. (Wiegert)
Prerequisite: BIO 302 and one other senior division course in biological science.
A series of lectures designed to explore the principles of energetics as applied to ecological systems.

801. Parasitic Protozoa. (McGhee)
Prerequisite: Consent of instructor.
Experimental study of the morphology, life his-

tories, classification and parasitic relationships of protozoan parasites of man and the lower animals.

802. Selected Topics in the Biochemistry of Parasites. (Agosin)
Prerequisite: BCH 802 and a course in parasitology, or permission of the instructor.
Comparative aspects of metabolism of parasitic protozoans and helminths including unique biochemical characteristics, rational basis of chemotherapy, biochemistry of parasite vectors and their control.

803. Helminthology. (Damian)
Prerequisite: Consent of instructor.
Study of the morphology, life histories, classification and parasitic relationship of the helminths.

810. Liminology and Oceanography. 5 hours. Three lectures and two double laboratory periods. (Pomeroy)
Prerequisite: Two appropriate senior division courses, plus a working knowledge of elementary physics, chemistry and algebra.
The physics, chemistry, and biology of lakes, streams and oceans.

811. Marine Biology. 5 hours. Three lectures and two double laboratory periods. (Pomeroy)
Prerequisite: ZOO 810.
Populations of the oceans, their interactions and relations to the environment.

812. Fresh Water Biology. 5 hours. Two lectures and three double laboratory periods.
Prerequisite: ZOO 810.
Study of fresh water organisms, their identification, natural history and environmental relationships.

813. Seminar in Hydrobiology. 1 hour. Max. 6 hours. (Pomeroy, Scott)
Prerequisite: Consent of the instructor.
Weekly meetings for discussion of current research in marine and fresh-water biology and related areas.

820. Cellular Physiology. 5 hours. Three lectures and two double laboratory periods. (Cosgrove)
Prerequisite: One course each in physiology and physical chemistry.
A study, at the celluar level, of the nature and mechanisms of the fundamental physiological processes.

821. Advanced Physiology. (Cosgrove, Kent, Taylor)
Prerequisite: ZOO 624.
An intensitve study, through reading, discussion and laboratory investigation, of special topics in physiology.

824. (PAR) Immunity to Animal Parasites.

826. Comparative Neurophysiology. 5 hours. Three lectures and two double laboratory periods. (Taylor)
Prerequisite: ZOO 624.
Properties and functions of nervous systems, receptors and muscles.

830. (ENT, PS, PAR, PAT) Seminar in Parasitology. 1 hour. Max. 6 hours. (McGhee)
Prerequisite: Consent of instructor.
Weekly meeting devoted to discussions of parasitological subjects.

840. Animal Cytology. 5 hours. Three lectures and two trible lab periods. (Bryan)
Prerequisite: BIO 340.
The cell as a structural and functional unit. Role of nucleus and cytoplasm in cellular processes, development and in inheritance.

855. (BOT) Population Ecology. 5 hours. Two double lectures and one discussion group. (Smith)
Prerequisite: Consent of instructor.
Ecological principles with emphasis on population dynamics.

856. Ecology Seminar. 1 hour. Max. 6 hours. (Odum)
Prerequisite: Consent of instructor.
Weekly meetings covering recent advances in ecology and emphasizing the integration of current ideas and data from plant, animal and microbial research.

857. Pollution Ecology. 3 hours. (Odum, Wiebe)
Prerequisite: Consent of the instructors.
Problems of environmental pollution from the standpoint of the basic biological sciences with particular emphasis on the ecosystem concept.

858. Systems Ecology I. 5 hours. Two lectures and one single laboratory period. (Patten)
Prerequisite: Consent of the instructor.
Design and organization of ecological systems, with digital and analog computer implementation of models. Topics in systems analysis and operations research as applied to ecology.

859. Systems Ecology II. 5 hours. Two lectures and one single laboratory period. (Patten)
Prerequisite: ZOO 858.
Design and organization of ecological systems, with digital and analog computer implementation of models. Topics in systems analysis and operations research as applied to ecology.

860. Seminar in Cell Biology. 1 hour. (Bryan)
Prerequisite: Consent of the instructor.
Weekly meetings devoted to discussions of current research in cell biology.
A different main theme will be selected for each

quarter offered to give emphasis to areas showing especially significant advances.

868. Systems Ecology: Dynamic Analysis I. (Patten)
Prerequisite: ZOO 859.
Transient response, frequency response, pulse testing and sensitivity analysis; field and laboratory applications.

869. Systems Ecology: Dynamic Analysis II. (Patten)
Prerequisite: ZOO 868.
System theory of the organism-environment inflation in ecosystems.

870. Genetics Seminar. 1 hour. Max. 6 hours. (Anderson, Thompson)
Prerequisite: Consent of the instructors.
Weekly meetings reviewing recent research literature in genetics.

880. Seminar in Developmental Biology. 1 hour. Max. 6 hours. (Coward)
Prerequisite: Consent of the instructor.
Weekly discussion of current literature in developmental biology.

894. Cytochemistry. 5 hours. Three lectures and two triple lab periods. (Bryan)
Prerequisite: ZOO 840 and BCH 801.
Theory and techniques for chemical analysis of individual cells. Interpretation of cell chemistry in relation to replication, differentiation and growth.

900. Problems in Zoology. 1–15 hours.
This course allows students to work intensively on approved problems in certain fields of zoology.

930. Thesis. 5–50 hours.

GRADUATE FACULTY

EX-OFFICIO MEMBERS

Davison, Fred Corbet, *President and Professor of Veterinary Pathology*
Ph.D., Iowa State

Anderson, Robert Cletus, *Vice President for Research and Professor of Sociology*
Ph.D., New York

Prunty, Merle C., Jr., *Acting Vice President for Academic Affairs and Alumni Foundation Distinguished Professor of Geography*
Ph.D., Clarke

Younts, S. Eugene, *Vice President for Services and Professor of Agronomy*
Ph.D.,Cornell

Beaird, James Ralph, *Dean of the School of Law and Professor of Law*
L.L.M., George Washington

Anderson, David P., *Dean of the College of Veterinary Medicine and Professor of Medical Microbiology and Avian Medicine*
Ph.D., Wisconsin

Ansel, Howard Carl, *Dean of the School of Pharmacy and Professor of Pharmacy*
Ph.D., Florida

Boes, Warren Norman, *Director of Libraries*
A.M.L.S., Michigan

Cutlip, Scott M., *Dean of the School of Journalism and Professor of Journalism*
Ph.M., Wisconsin

Edwards, Hardy M., Jr., *Dean of the Graduate School and Professor of Poultry Science and Animal Nutrition*
Ph.D., Cornell

Flewellen, William Crawford, Jr., *Dean of the College of Business Administration and Professor of Accounting and Business Law*
Ph.D., Columbia

Garren, Henry W., *Dean and Coordinator of the College of Agriculture and Professor of Poultry Science*
Ph. D., Maryland

Herrick, Allyn Marsh, *Dean of the School of Forest Resources and Professor of Forest Resources*
Ph.D., Michigan

Nicholls, Robert P., *Dean of the School of Environmental Design and Professor of Landscape Architecture and Environmental Design*
M.L.A., Pennsylvania

Payne, William Jackson, *Acting Dean of the College of Arts and Sciences and Professor of Microbiology*
Ph.D., Tennessee

Pou, Emily Quinn, *Dean of the School of Home Economics and Professor of Home Economics*
Ph.D., Wisconsin

Stewart, Charles Ashley, *Dean of the School of Social Work and Professor of Social Work*
Ph.D., Florida State

Williams, Joseph Anderson, *Dean of the College of Education and Professor of Educational Administration*
Ed.D., Georgia

APPOINTED MEMBERS

Aaron, Ira Edward, *Alumni Foundation Distinguished Professor of Reading*
Ph.D., Minnesota

Aaron, Robert L., *Associate Professor of Reading Education*
Ed.D., Georgia

Abbe, Winfield Jonathan, *Associate Professor of Physics*
Ph.D., California

Adams, Henry Earl, *Professor of Psychology*
Ph.D., Louisiana State

Adomian, George, *Barrow Professor of Mathematics and Director of the Center for Applied Mathematics*
Ph.D., California

Agosin, Moises, *Professor of Zoology*
M.D., Chile

Alexander, James Wilson, *Professor of History*
Ph.D., Johns Hopkins

Algeo, John T., *Professor of English and Head of the Department of English*
Ph.D., Florida

All, John N., *Assistant Professor of Entomology*
Ph.D., Wisconsin

Allard, Gilles O., *Visiting Professor of Geology*
Ph.D., Johns Hopkins

Allen, Joseph D., III, *Associate Professor of Psychology*
Ph.D., Southern Illinois

Allinger, Norman L., *Research Professor of Chemistry*
Ph.D., U.C.L.A.

Allsbrook, Ogden O., Jr., *Associate Professor of Economics*
Ph.D., Virginia

Almy, Timothy Albert, *Associate Professor of Political Science*
Ph.D., California

Anderson, David P., *Professor of Avian Medicine and Medical Microbiology and Dean of the College of Veterinary Medicine*
Ph.D., Wisconsin

Anderson, Harry Edwin, Jr., *Professor of Educational Psychology*
Ph.D., Texas

Anderson, James L., *Associate Professor of History*
Ph.D., Virginia

Anderson, Oscar, *Professor of Agronomy and Head of the Department of Agronomy, Experiment, Georgia*
Ph.D., Rutgers

Anderson, Richard J., *Associate Professor of Social Work and Education*
Ed.D., Illinois State

Anderson, Wyatt W., *Professor of Zoology*
Ph.D., Rockefeller

Andrews, James W., *Associate Professor of Entomology, Coastal Plain Experiment Station*
Ph.D., Georgia

Ansel, Howard Carl, *Professor of Pharmacy and Dean of the School of Pharmacy*
Ph.D., Florida

Antenen, Wayne W., *Associate Professor of Counselor Education and Acting Head of Program for Counselor Education and Human Development*
Ph.D., Illinois

Ashley, Doyle A., *Associate Professor of Agronomy*
Ph.D., North Carolina State

Atyeo, Warren Thomas, *Professor of Entomology*
Ph.D., Kansas

Avise, John C., *Assistant Professor of Zoology*
Ph.D., Tennessee

Ayers, Robert H., *Professor of Philosophy and Religion*
Ph.D., Vanderbilt

Ayres, John C., *D. W. Brooks Distinguished Professor of Food Science*
Ph.D., Illinois

Azoff, Edward A., *Assistant Professor of Mathematics*
Ph.D., Michigan

Bailey, Wilfrid Charles, *Professor of Anthropology and Head of the Department of Anthropology*
Ph.D., Chicago

Baine, Rodney Montgomery, *Professor of English*
Ph.D., Harvard

Baker, Todd, *Assistant Professor of Physics*
Ph.D., Michigan

Baldwin, Jack N., *Research Professor of Microbiology and in the Institute of Comparative Medicine*
Ph.D., Purdue

Ball, Billy J., *Professor of Mathematics*
Ph.D., Texas

Ballew, Leighton Milton, *Professor of Drama and Theatre*
Ph.D., Illinois

Balswick, Jack O., *Associate Professor of Sociology and Child and Family Development*
Ph.D., Iowa

Bargmann, Rolf, *Professor of Statistics*
Ph.D., North Carolina

Barksdale, Hiram Collier, *Professor of Marketing*
Ph.D., New York

Barry, John Reagan, *Professor of Psychology*
Ph.D., Ohio State

Bartley, Numan V., *Professor of History*
Ph.D., Vanderbilt

Bashaw, Wilbur Louis, *Professor of Research and Measurement*
Ph.D., Florida State

Bates, Frederick Leroy, *Professor of Sociology*
Ph.D., North Carolina

Baumgarter, Ted A., *Professor of Health and Physical Education*
Ph.D., Iowa

Beaty, Elvis Roy, *Professor of Agronomy*
Ph.D., Mississippi State

Beck, Elwood M., Jr., *Associate Professor of Sociology*
Ph.D., Tennessee

Belcher, John Cheslow, *Professor of Sociology*
Ph.D., Wisconsin

Bell, Durham K., *Associate Professor of Plant Pathology/Genetics, Tifton*
Ph.D., North Carolina State

Beranek, William, *Mills B. Lane Professor of Banking and Finance*
Ph.D., U.C.L.A.

Berisford, Charles Wayne, *Associate Professor of Entomology*
Ph.D., Virginia Polytechnic Institute

Bernstein, Irwin S., *Professor of Psychology*
Ph.D., Chicago

Berrigan, Joseph Richard, Jr., *Professor of History*
Ph.D., Tulane

Bertsch, Gary K., *Associate Professor of Political Science*
Ph.D., Oregon

Beth, Loren P., *Professor of Political Science and Head of Department of Political Science*
Ph.D., Chicago

Beuchat, Larry Ray, *Associate Professor of Food Science, Experiment, Georgia*
Ph.D., Michigan State

Billings, C. David, *Associate Professor of Banking & Finance and Academic Coordinator of Graduate Studies for the College of Business Administration*
Ph.D., Missouri, Columbia

Billingsley, Keith R., *Assistant Professor of Political Science*
Ph.D., Wisconsin

Bishop, Leslee J., *Professor of Curriculum and Supervision*
Ed.D., Northwestern University

Black, Clanton C., *Professor of Biochemistry and Head of the Department of Botany*
Ph.D., Florida

Blackstone, William T., *Research Professor of Philosophy and Chairman of the Division of Social Sciences*
Ph.D., Duke

Blake, Kathryn A., *Professor of Special Education and Acting Chairman of the Program for Exceptional Children*
Ph.D., Syracuse

Blanton, C. DeWitt, *Professor of Medicinal Chemistry*
Ph.D., Mississippi

Blaubergs, Maija S., *Assistant Professor of Educational Psychology*
Ph.D., California

Bledsoe, Joseph Cullie, *Professor of Educational Psychology*
Ph.D., George Peabody

Blomquist, Richard F., *Adjunct Professor of Forest Resources*
Ph.D., Iowa

Blue, C. Milton, *Professor of Speech Pathology and Audiology*
Ph.D., George Peabody

Blum, Murray Sheldon, *Professor of Entomology*
Ph.D., Illinois

Boardman, William Kilbourne, III, *Professor of Psychology*
Ph.D., Duke

Boerma, H. Roger, *Assistant Professor of Agronomy*
Ph.D., Illinois

Boney, F. N., *Professor of History*
Ph.D., Virginia

Bonney, Warren Chester, *Professor of Counselor Education*
Ph.D., Texas

Booth, Nicholas H., *Professor of Physiology and Pharmacology*
Ph.D., Colorado

Boswell, Fred Carlen, *Professor of Agronomy, Experiment, Georgia*
Ph.D., Pennsylvania State

Bouldin, Richard H., *Associate Professor of Mathematics*
Ph.D., Virginia

Bowen, John Metcalf, *Professor of Veterinary Physiology and Pharmacology and Associate Dean for Research and Graduate Affairs, College of Veterinary Medicine and Director of the Veterinary Medical Experiment Station*
Ph.D., Cornell

Bowen, Robert Thompson, Jr., *Professor of Health and Physical Education*
Ph.D., Michigan

Box, James E., *Adjunct Research Associate of Agronomy*
Ph.D., Utah State

Boyd, George Edward, *Professor of Chemistry*
Ph.D, Chicago

Brady, Ullman Eugene, Jr., *Professor of Entomology*
Ph.D., Illinois

Braucher, Charles Landis, *Professor of Pharmacy Administration*
Ph.D., Purdue

Brewer, John Michael, *Associate Professor of Biochemistry*
Ph.D., Johns Hopkins

Brisbin, I. Lehr, *Adjunct Assistant Professor of Poultry Science and Research Associate in ERDA, Savannah River*
Ph. D., Georgia

Britton, Walter M., *Associate Professor of Poultry Science, College Experiment Station*
Ph.D., North Carolina State

Brody, Gene H., *Assistant Professor of Child and Family Development*
Ph.D., Arizona

Brown, Acton R., *Associate Professor of Agronomy*
Ph.D., Wisconsin

Brown, Claud Lafayette, *Professor of Botany and Forest Resources*
Ph.D., Harvard

Brown, Earnest Evan, *Professor of Agricultural Economics*
Ph.D., Florida

Brown, John, *Associate Professor of Medical Microbiology*
Ph.D., Wisconsin

Brown, Robert Henry, *Professor of Agricultural Engineering, Head of the Department, and Chairman of the Division of Agricultural Engineering*
Ph.D., Cornell

Brown, Ronald Harold, *Professor of Agronomy*
Ph.D., Virginia Tech

Bryan, John H. D., *Professor of Zoology*
Ph.D., Columbia

Buck, James Harold, *Associate Professor of History, Lecturer in Military Science, and Acting Assistant Vice President for Academic Affairs*
Ph.D., American

Bufkin, Ernest Claude, Jr., *Associate Professor of English*
Ph.D., Vanderbilt

Bullock, Charles S., III, *Professor of Political Science*
Ph.D., Washington

Bundschuh, Ernest L., *Associate Professor of Physical Education and Mental Retardation*
Ph.D., Maryland

Bunnell, Bradford N., *Professor of Psychology and Associate Dean of the Graduate School*
Ph.D., Carnegie-Mellon

Burkhard, Donald G., *Professor of Physics*
Ph.D., Michigan

Burton, Glenn Willard, *Alumni Foundation Distinguished Professor of Agronomy, Principal Geneticist, Tifton, U.S.D.A.*
Ph.D., Rutgers

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DEPARTMENTAL PREFIX ABBREVIATIONS

Accounting	ACC
Administration and Supervision Education	EAS
Adult Education	EAD
Agricultural Economics	AEC
Agricultural Education	EAG
Agricultural Engineering	AEN
Agricultural Extension	AET
Agricultural Mechanization Technology	AMT
Agriculture	AGR
Agronomy	AGY
Air Force ROTC—Aerospace Studies	AIR
Animal Nutrition	AN
Animal Science	AS
Anthropology	ANT
Aramaic/Syriac	ARA
Army ROTC—Military Science	MIL
Art	ART
Art Education	EAR
Art Literature	ARL
Arts and Sciences Experimental	ASE
Astronomy	AST
Avian Medicine	AM
Banking and Finance	FIN
Biochemistry	BCH
Biology	BIO
Botany	BOT
Business Education	EBE
Catalan	CAT
Chemistry	CHM
Child and Family Development	CFD
Classics	CLC
Clothing and Textiles	CLT
Comparative Literature	CML
Counseling and Human Development Services	ECP
Curriculum and Supervision	ECS
Dairy Science	DS
Dance Education	DED
Distributive Education	EDE
Drama	DRA
Early Childhood Education	ECE
Economics	ECN
Education	EDU
Educational Media	EAV
Educational Philosophy	EPH
Educational Psychology and Measurement	EPY
Educational Research	ERS
Elementary Education	EEL
Engineering Technology	ET
English	ENG
English Education	EEN
Entomology	ENT
Environmental Design	ENV or LAR
Environmental Health Science	EHS
Exceptional Children Education	EXC
Fine Arts	FA
Foods and Nutrition	FDN
Food Science	FS
Foreign Language Education	EFL
Forest Resources	FRS
Foundations of Education	EFN
French	FR
Geography	GGY
Geology	GLY
German	GER
German Translation	GET
Gerontology	GNT
Graduate School Experimental	GSE
Greek	GRK
Health Education	HED
Health Occupations Education	EHO
Hebrew	HBW
Higher Education	EHI
History	HIS
Home Economics Education	EHE
Horticulture	HOR
Housing, Furnishings, and Home Management	HFM
Industrial Arts Education	EIA
Italian	ITA
Japanese	JAP
Journalism and Mass Communication	JRL
Landscape Architecture	LAR or ENV

Language and Literature	LLT
Large Animal Medicine and Surgery	LMS
Latin	LAT
Law	LAW
Library Education	ELE
Linguistics	LIN
Management	MAN
Management Sciences	MS
Marketing	MKT
Mathematics	MAT
Mathematics Education	EMT
Medical Microbiology	MMB
Microbiology	MIB
Music	MUS
Music Education	EMU
Netherlandic	NET
Norwegian	NOR
Parasitology	PAR
Park and Recreation Administration	REC
Pharmacy	PHR
Philosophy	PHY
Physical Education	PED
Physical Sciences	PSC
Physics	PCS
Physiology and Pharmacology	VPH
Plant Genetics	GEN
Plant Pathology	PAT
Political Science	POL
Portuguese	POR
Poultry Science	PS
Provencal	PRO
Psychology	PSY
Reading Education	ERD
Real Estate and Urban Development	RE
Recreation	REC
Religion	REL
Risk Management, Insurance, and Management Sciences	INS
Romance Language	ROM
Russian	RUS
Safety Education	SED
Sanskrit	SKT
Science	SCI
Science Education	ESC
Small Animal Medicine and Surgery	SMS
Social Science	SOS
Social Science Education	ESS
Social Work	SW
Social Work Education	ESW
Sociology	SOC
Spanish	SP
Special Studies English	SSE
Special Studies Math	SSM
Special Studies Reading	SSR
Speech Communication	SPC
Speech Education	ESP
Speech Pathology and Audiology	SPA
Statistics and Computer Science	STA
Student Teaching Education	EST
Swedish	SWE
Trade and Industrial Education	ETI
Veterinary Anatomy and Radiology	VAH
Veterinary Medicine	VET
Veterinary Parasitology	PAR
Veterinary Pathology	VPP
Veterinary Physiology and Pharmacology	VPH
Vocational Education	EVO
Zoology	ZOO

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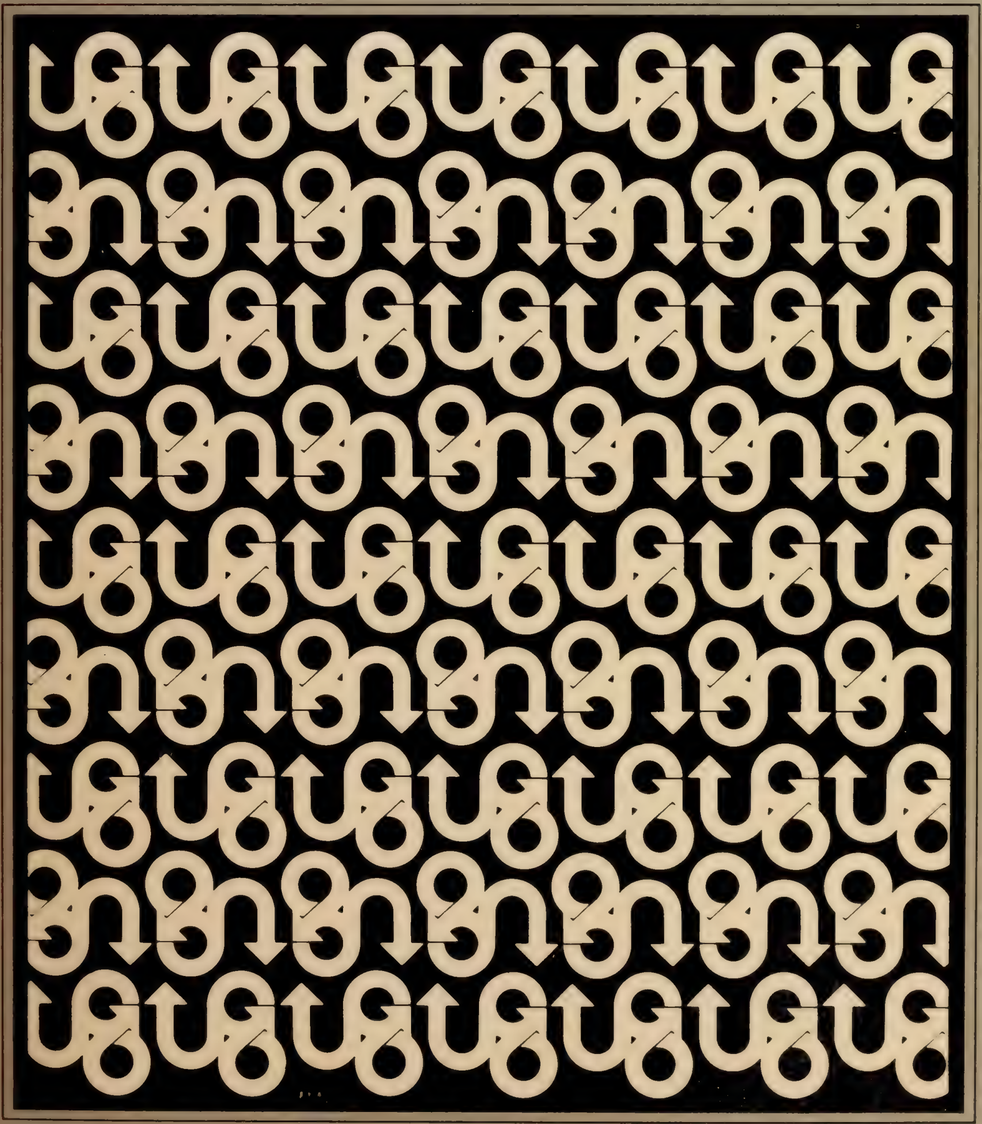
Graduate Admissions
534 Graduate Studies Building
University of Georgia
Athens, Georgia 30602

NON-PROFIT ORG.
U. S. Postage
PAID
Permit No. 165
Athens, Georgia

Cost $27 500
Quantity 30,000

The University of Georgia
Bulletin 1977-79



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Volume LXXVI, No. 2
June, 1977

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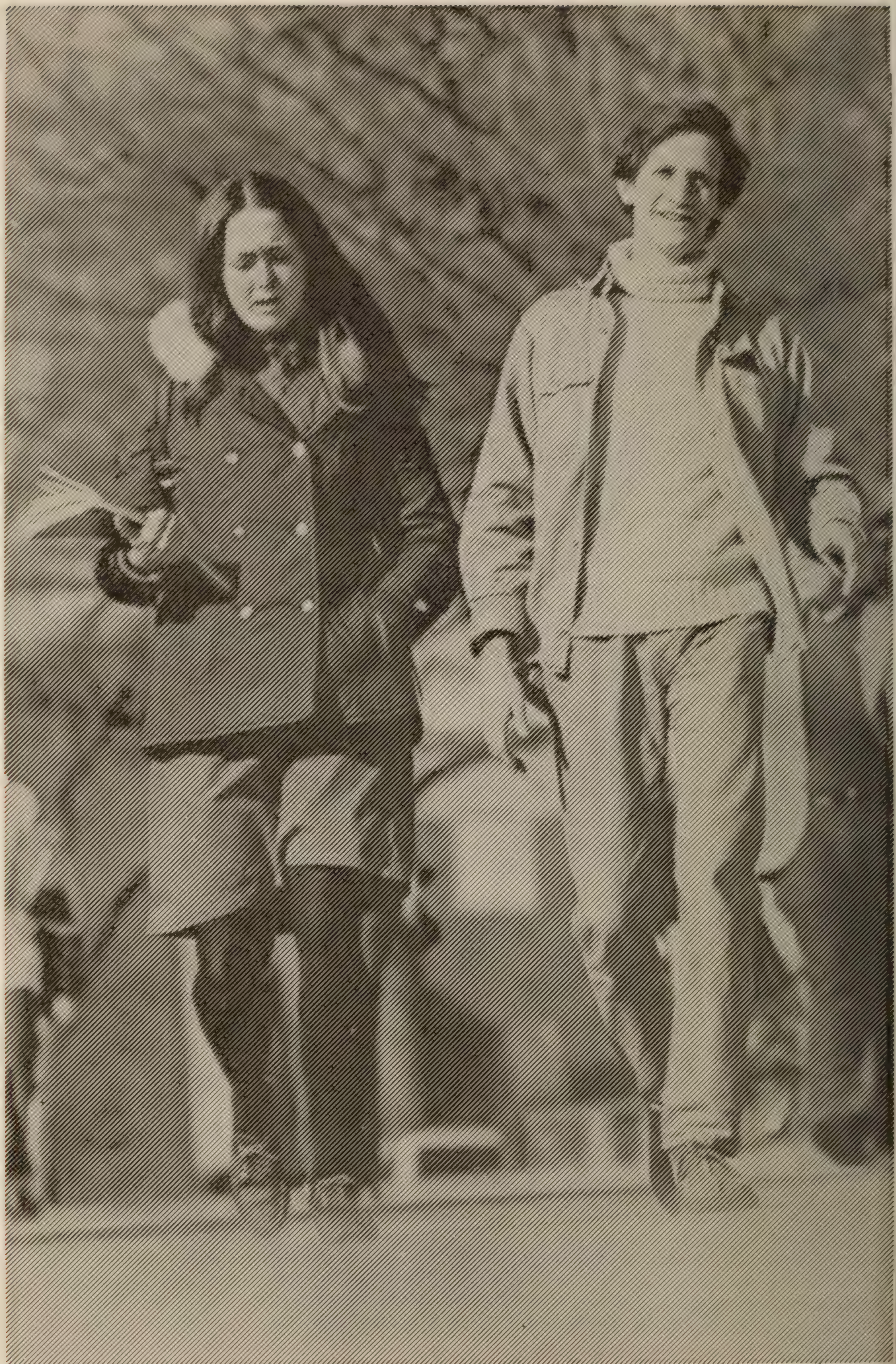

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CALENDAR 1977–1979

Fall Quarter 1977

September 20
  Residence halls open
September 21
  Late Registration
September 22
  Classes begin
November 23–27
  Thanksgiving recess
December 1
  Classes end
December 2
  Reading day
December 5–8
  Examinations
December 9
  Vacation begins

Winter Quarter 1978

January 2
  Residence halls open
January 3
  Late Registration
January 4
  Classes begin
March 10
  Classes end
March 11
  Reading day
March 13–16
  Examinations
March 17
  Spring recess begins

Spring Quarter 1978

March 26
  Residence halls open
March 27
  Late Registration
March 28
  Classes begin
June 1
  Classes end
June 2
  Reading day
June 5–8
  Examinations
June 12
  Graduation

Summer Quarter 1978

June 13
  Residence halls open
June 14
  Late Registration
June 15
  Classes begin
July 3–4
  Holiday
July 21
  Short term classes end
July 22
  Reading day
July 24–25
  Short term examinations
August 11
  Through term classes end
August 12
  Reading day
August 14–16
  Through term examinations

Fall Quarter 1978

September 20
Residence halls open
September 21
Late Registration
September 22
Classes begin
November 22–26
Thanksgiving recess
December 1
Classes end
December 4
Reading day
December 5–8
Examinations
December 9
Vacation begins

Winter Quarter 1979

January 2
Residence halls open
January 3
Late Registration
January 4
Classes begin
March 12
Classes end
March 13–16
Examinations
March 17
Spring recess begins

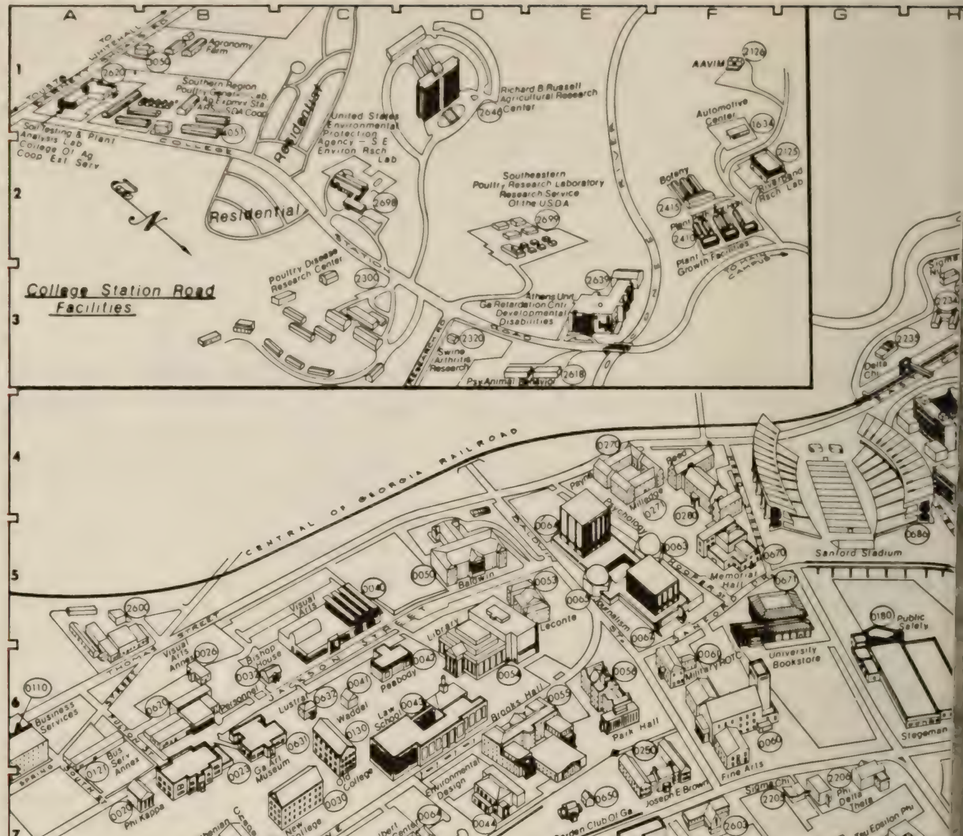
Spring Quarter 1979

March 25
Residence halls open
March 26
Late Registration
March 27
Classes begin
May 31
Classes end
June 1
Reading day
June 4–7
Examinations
June 11
Graduation

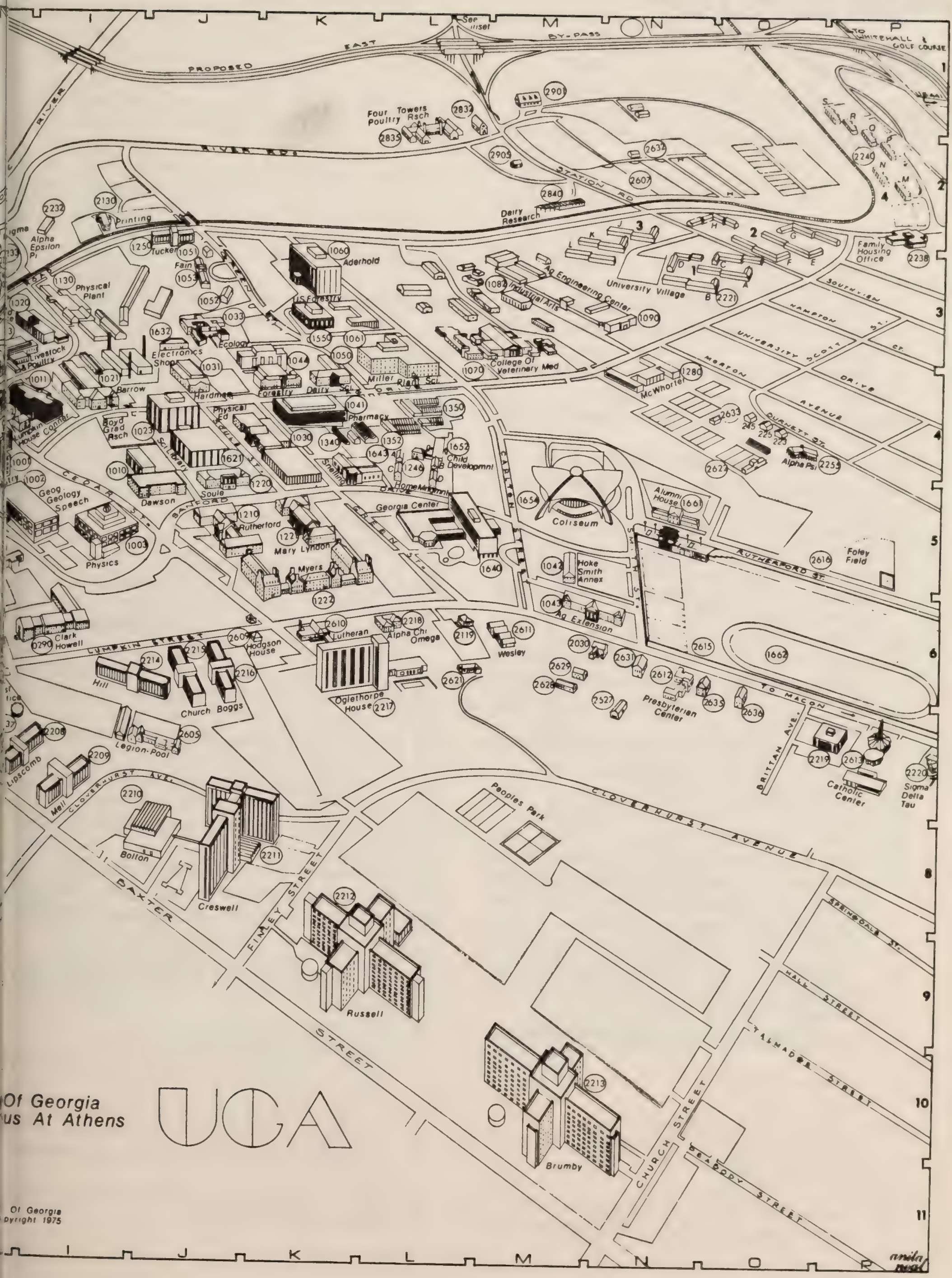
Summer Quarter 1979

June 14–August 15

CAMPUS MAP



See Key to Map on Following Page


I
J
K
L
See inset
M
N
O
P
To Whitehall & Golf Course
1
2
3
4
5
6
8
9
10
11
Proposed
East
By-Pass
River
River Rd
Station Rd
Four Towers Poultry Rsch
2832
2835
2901
2905
2632
2607
2840
Dairy Research
2130
Printing
2232
Alpha Epsilon Pi
Sigma
1250
Tucker
1051
Fain
1053
1060
Aderhold
US Forestry
1130
Physical Plant
1320
1052
1033
1632
Electronics Shop
Ecology
1550
1061
1044
1050
Livestock & Poultry
1021
1031
Miller
Plant Sci
Barrow
Hardman
Forestry
Dairy Sci
1011
Boyd Grad Rsch
Physical Ed
1041
Pharmacy
1350
Lumpkin House
Conner
1023
Sci Library
1030
1340
1352
1652
Child Development
1643
1246
1621
Snelling
Home Mgmt
1001
1010
1220
1002
Geog Geology Speech
Dawson
Soule
Cedar St
Sanford
Green St
Georgia Center
1210
Rutherford
122
Mary Lyndon
Myers
1222
1003
Physics
1640
Carlton
1654
Coliseum
1082
Industrial Arts
Ag Engineering Center
1090
1070
College Of Veterinary Med
1280
McWhorter
University Village
A
B
C
D
E
F
G
H
J
K
L
M
N
O
Q
R
S
2221
2240
2238
Family Housing Office
Southview
Hampton
University
Scott
Ct.
Morton
Drive
Avenue
Burnett St
2633
245
225
223
2627
Alpha Psi
2255
Alumni House
1661
Smith
Rutherford St
2616
Foley Field
1042
Hoke Smith Annex
1043
Ag Extension
0290
Clark Howell
Lumpkin Street
2609
Hodgson House
2610
Lutheran
2218
Alpha Chi Omega
2119
2611
Wesley
2214
2215
2216
Hill
Church
Boggs
Oglethorpe House
2217
2621
2030
2631
2629
2628
2612
2627
2615
1662
Presbyterian Center
2635
2636
To Macon
Brittan Ave.
2219
2613
Catholic Center
2220
Sigma Delta Tau
2208
2605
Legion Pool
2209
Lipscomb
Mell
Cloverhurst Ave.
Cloverhurst Avenue
2210
Bolton
2211
Creswell
Baxter
Finley Street
Peoples Park
2212
Russell
Springdale St.
Hall Street
Talmadge Street
Street
2213
Brumby
Church Street
Peabody Street
Of Georgia
us At Athens
UGA
Of Georgia
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CAMPUS MAP KEY

1. Academic Building (Student Affairs, Financial Aid, Registrar, Honors Program, Admissions), 7–B
2. Aderhold Building (College of Education), 2–K
3. Administrative Data Processing Building, 5–A
4. Agricultural Engineering Center, 2–M
5. Agricultural Extension Building, 5–N
6. Alpha Chi Omega Sorority, 5–L
7. Alpha Epsilon Pi Fraternity, 1–I
8. Alpha Tau Omega Fraternity, 2–H
9. Alumni House (Alumni Relations),4–N
10. Baldwin Hall (Sociology, Anthropology, Political Science), 4–D
11. Baptist Student Union, 6–F
12. Barrow Hall (Dean, College of Agriculture, Electron Microscopy Lab, Safety Services), 3–I
13. Baseball Field, 4–P
14. Biological Sciences Building (Entomology, Microbiology, Zoology), 3–H
15. Bishop House (Art), 5–C
16. Boggs Hall (Women's Residence), 5–J
17. Bolton Hall Cafeteria, 7–J
18. Boyd Graduate Studies Research Center (Computer Center, Mathematics, Statistics, Biochemistry, Dean, Graduate School, Vice President for Research), 3–J
19. Brumby Hall (Women's Residence), 9–M
20. R. Preston Brooks Building, 5–E
21. Business Services Building, 5–A
22. Business Services Annex, 5–A
23. Candler Hall (Institute of Higher Education), 7–C
24. Catholic Center, 6–P
25. Chapel, 6–B
26. Chemistry Building, 3–H
27. Child Development Laboratory, 3–L
28. Chi Phi Fraternity, 7–C
29. Chi Psi Fraternity, 7–E
30. Church Hall (Women's Residence), 5–J
31. Clark Howell Hall (Career Placement), 5–I
32. Coliseum (Athletic Department), 4–N
33. Conner Hall, (Cooperative Extension Service), 3–I
34. Creswell Hall (Women's Residence), 7–K
35. Dairy Farm, 1–L
36. Dairy Science Creamery, 3–K
37. Dawson Hall (School of Home Economics), 3–J
38. Delta Chi Fraternity, 2–H
39. Delta Phi Epsilon Sorority, 6–P
40. Demosthenian Hall, 6–B
41. Dudley Hall (College of Education), 2–J
42. Ecology Building, 2–J
43. Environmental Design Building, 6–D
44. Fain Hall (College of Education), 2–J
45. Family Housing Office/Campus Station Post Office, 2–P
46. Family Housing (University Village), 2–O
47. Fine Arts Building (Music, Drama), 5–F
48. Food Science Building, 2–I
49. Forest Resources Building (Institute of Natural Resources), 2–K
50. Forestry Science Laboratory, 2–L
51. Forestry Science Lab Annex, 2–K
52. Garden Club of Georgia, Inc., and Memorial Gardens, 6–E
53. Geography, Geology, Speech Building, 4–I
54. Geology Hydrothermal Laboratory, 4–I
55. Georgia Center for Continuing Education, 4–L
56. Georgia Museum of Art, 5–C
57. Gilbert Health Center (University Health Services), 6–D
58. Greenhouses, 3–L
59. Griggs Hall (Arts & Sciences), 2–J
60. Hardman Hall (Air Force ROTC, Military Clothing), 3–J
61. Hill Hall (Women's Residence), 5–J
62. Hodgson House (Episcopalian Center), 5–K
63. Hoke Smith Annex (Cooperative Extension), 4–M
64. Home Management Courses (Home Economics), 3–L

65. Industrial Arts Building, 2–M
66. Joe Brown Hall (Music, Theatre), 6–F
67. Journalism Building, 4–F
68. Kappa Alpha Fraternity, 7–D
69. Kappa Sigma Fraternity, 2–H
70. Law School Building, 5–D
71. Learning Service Center (Social Work), 5–N
72. LeConte Hall (History), 4–E
73. Legion Pool, 6–J
74. Library, Main (Georgia Review), 5–D
75. Library, Science, 3–J
76. Lipscomb Hall (Men's Residence), 6–I
77. Livestock Poultry Building (Animal Science, Agricultural Economics, Dairy Science, Poultry Science), 2–H
78. 1088 S. Lumpkin St. (Auxiliary Enterprises), 5–M
79. 1238 S. Lumpkin St. (Pre-School—Home Economics), 5–N
80. 1242 S. Lumpkin St. (Art), 5–N
81. 1260 S. Lumpkin St., 5–O
82. 1280 S. Lumpkin St., 5–O
83. Lumpkin House (Rockhouse), 3–I
84. Lustrat House (President), 5–C
85. Lutheran Center, 5–K
86. Mary Lyndon Hall (Women's Residence), 4–K
87. Married Student Housing, 1–P
88. McWhorter Hall (Athletic Men's Residence), 3–N
89. Meigs Hall (Germanic & Slavic Languages, Environmental Design), 7–C
90. Mell Hall (Women's Residence), 6–I
91. Memorial Hall (University Union, Student Activities), 4–F
92. Military Science Building (Army ROTC), 5–F
93. Milledge Hall (Men's Residence), 3–F
94. Miller Plant Sciences Building (Botany, Agronomy, Horticulture, Plant Pathology), 2–L
95. Moore College (Romance Languages), 7–C
96. Morris Hall (Law & Graduate Men's Residence), 6–F
97. Myers Hall (Co-ed Residence), 4–K
98. New College (Dean, Arts & Sciences, Institutional Research, Career Planning, Internal Auditing), 6–C
99. Oglethorpe House (Private Co-Ed Residence), 5–L
100. Old College (Vice Presidents for Academic Affairs, Development and Service, ICAD, University Relations), 5–C
101. Park Hall (English, Comparative Literature, Classics, Literature), 5–E
102. Payne Hall (Men's Residence), 3–E
103. Peabody Hall (Philosophy & Religion), 5–D
104. Personnel Services Building (Mail Room), 5–B
105. Pharmacy Building, 3–K
106. Phi Delta Theta Fraternity, 6–G
107. Phi Kappa Hall, 6–B
108. Physical Plant, 2–I
109. Physics & Astronomy Building, 4–I
110. Pi Kappa Alpha Fraternity, 6–E
111. Post Office (Self-Service), 6–I
112. Poultry Research Laboratory, 1–J
113. Practice Fields, 5–O
114. Psychology Building, 4–E
115. Public Safety Building, 5–G
116. Recording for the Blind (Non-University), 8–G
117. Reed Hall (Co-ed Residence), 3–F
118. Russell Hall (Men's Residence, Housing and Off-Campus Housing Offices), 8–L
119. Rutherford Hall (Women's Residence), 4–J
120. Sanford Stadium, 3–G
121. Sigma Chi Fraternity, 6–G
122. Sigma Nu Fraternity, 2–H
123. Snelling Hall Cafeteria, 3–L
124. Soule Hall (Department of Offender Rehabilitation), 4–J
125 South Thomas Street Building (Art), 4–A
126. Stegeman Hall (Men's Physical Education), 5–H
127. Tau Epsilon Phi Fraternity, 6–H
128. Tennis Courts, 3–O
129. Terrell Hall (Institute of Government, Public Relations), 6–B
130. Track Field, 5–P
131. Tucker Hall (Social Work), 2–J
132. University Book Store, 4–G
133. Veterinary Medicine Building, 2–M
134. Visual Arts Building (Art), 4–C
135. Visual Arts Annex, 5–B
136. Waddel Hall (University Press), 5–C
137. Wesley Foundation (Methodist Center), 5–M
138. Women's Physical Education Building, 3–K

UNIVERSITY SYSTEM OF GEORGIA

BOARD OF REGENTS

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Mario J. Goglia, *Vice Chancellor—Research*

Howard Jordan, Jr., *Vice Chancellor—Services*

Harry B. O'Rear, Vice Chancellor—Health Affairs

W. Coye Williams, Jr., *Vice Chancellor—Academic Development*

Haskin R. Pounds, *Assistant Vice Chancellor*

James L. Carmon, *Assistant Vice Chancellor—Computing Systems*

Mary Ann Hickman, *Assistant Vice Chancellor—Personnel*

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Merle C. Prunty, *Acting Vice President*
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James H. Buck, *Acting Assistant Vice President*
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Vice President for Services
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Robert Louis Rowan, *Administrative Assistant*

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Libraries
Warren Norman Boes, *Director*

Registrar
Bruce T. Shutt, *Registrar*

Admissions
Morris Overton Phelps, *Director of Admissions*
Claire Swann, *Associate Director*

COLLEGES AND SCHOOLS

College of Arts and Sciences (1801)
John C. Stephens, Jr., *Dean*

School of Law (1859)
J. Ralph Beaird, *Dean*

School of Pharmacy (1903)
Howard C. Ansel, *Dean*

College of Agriculture (1906)
Henry Wilbur Garren, *Dean*

School of Forest Resources (1906)
Allyn Marsh Herrick, *Dean*

College of Education (1908)
Joseph Anderson Williams, *Dean*

Graduate School (1910)
Hardy Malcolm Edwards, *Dean*

College of Business Administration (1912)
William Crawford Flewellen, Jr., *Dean*

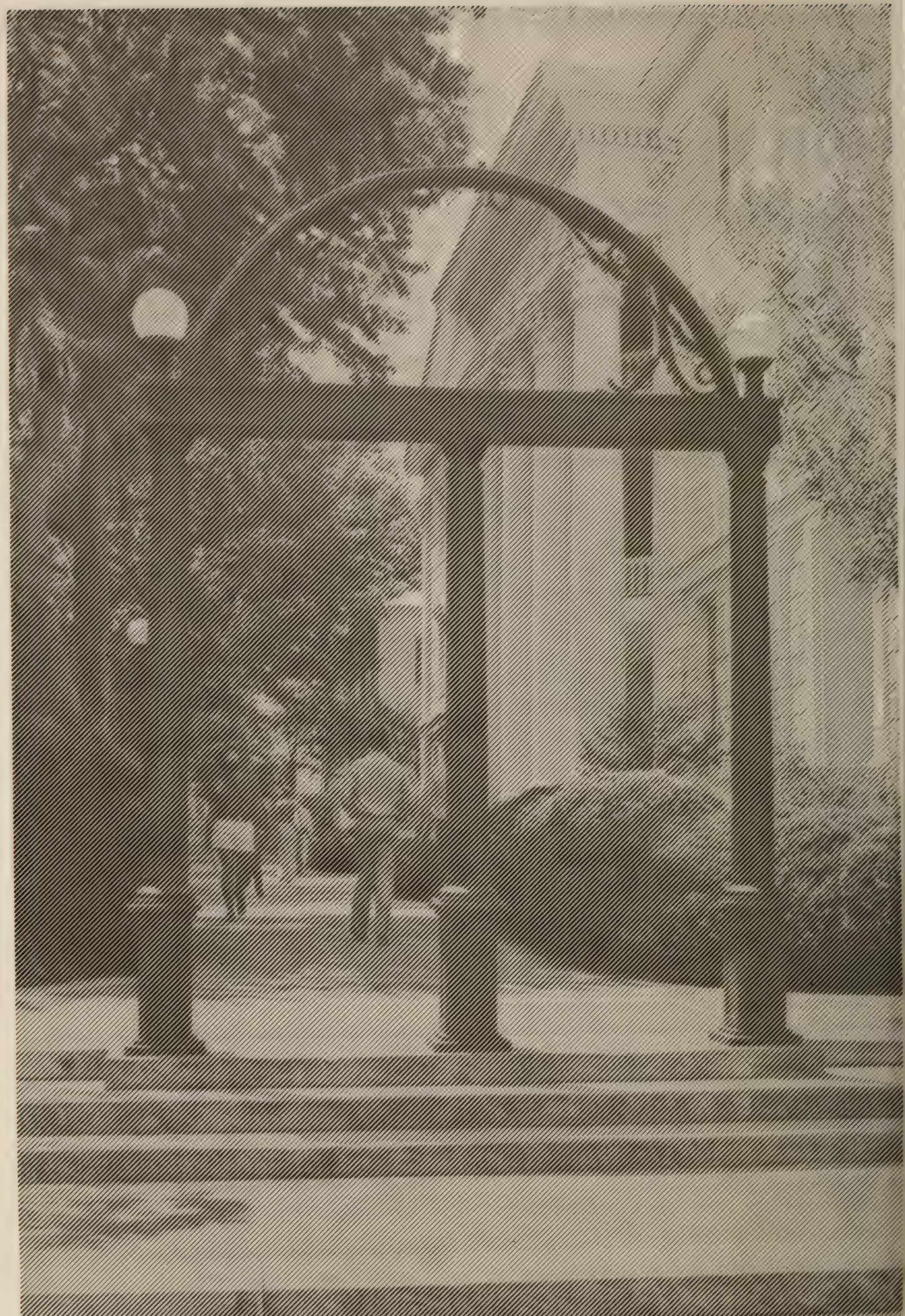
School of Journalism and Mass Communication (1915)
Scott M. Cutlip, *Dean*

School of Home Economics (1933)
Emily Quinn Pou, *Dean*

College of Veterinary Medicine (1946)
David P. Anderson, *Dean*

School of Social Work (1964)
Charles Ashley Stewart, *Dean*

School of Environmental Design (1969)
Robert P. Nicholls, *Dean*



THE UNIVERSITY

HISTORY

When The University of Georgia was incorporated by an act of the General Assembly on January 27, 1785, Georgia became the first state to charter a state supported university. In 1784 the General Assembly had set aside 40,000 acres of land to endow a college or seminary of learning.

At the first meeting of the board of trustees, held in Augusta on February 13, 1786, Abraham Baldwin was selected president of the University. Baldwin, a native of Connecticut and a graduate of Yale University who had come to Georgia in 1784, drafted the charter adopted by the General Assembly.

The University was actually established in 1801 when a committee of the board of trustees selected a land site. John Milledge, later a governor of the state, purchased and gave to the board of trustees the chosen tract of 633 acres on the banks of the Oconee River in northeast Georgia.

Josiah Meigs was named president of the University and work was begun on the first building, originally called Franklin College in honor of Benjamin Franklin and now known as Old College. The University graduated its first class in 1804.

The curriculum of traditional classical studies was broadened in 1843 to include courses in law, and again in 1872 when the University received federal funds for instruction in agriculture and mechanical arts.

Thirteen schools and colleges, with auxiliary divisions, carry on the University's programs of teaching, research and service. These colleges and schools and the dates of their establishment as separate administrative units are: College of Arts and Sciences, 1801; School of Law, 1859; School of Pharmacy, 1903; College of Agriculture, 1906; School of Forest Resources, 1906; College of Education,1908; Graduate School, 1910; College of Business Administration, 1912; School of Journalism and Mass Communication, 1915; School of Home Economics, 1933; College of Veterinary Medicine, 1946; School of Social Work, 1964; School of Environmental Design, 1969. The Division of General Extension, now the Georgia Center for Continuing Education, was incorporated into the University in 1947.

In 1931 the General Assembly of Georgia placed all state supported institutions of higher education, including The University of Georgia, under the jurisdiction of a single board. This organization, known as the University System of Georgia, is governed by the Board of Regents. The Board of Regents' executive officer, the chancellor, exercises a general supervisory control over all institutions of the University System, with each institution having its own executive officers and faculty.

PURPOSE

"*Et docere et rerum exquirere causas*" ... "To teach and to inquire into the nature of things."

The University of Georgia's motto succinctly sums up its purpose for existence. It is this commitment to the people of the state and the nation that shapes the University's growth and development.

Instruction

Teaching, the oldest function and purpose of the University, continues to be a primary and important responsibility. The institution affirms that the most basic right of its students is to receive from the University, its faculty and administration, that type of instruction, assistance and counseling which will enable students to develop their talents.

Through its teaching and research programs, the University seeks to stimulate respect for truth; to promote an analytical capacity of mind, enabling students to form intelligent conclusions and evaluate the significance of things; and to prepare them to be responsible citizens in a free and democratic society. A broad range of opportunities for career preparation is offered by the University through undergraduate, graduate and degree programs.

One of the most important academic developments at the University in recent years has been its emergence as a major institution of graduate education.

Research

The enlargement and application of knowledge through programs of basic and applied research is another primary purpose of the University.

Research activities are conducted as part of the regular work of all academic departments. In addition, research centers and institutes have been created to study specialized problems or to house specialized equipment, bringing together investigators from several subject areas for interdisciplinary study, and making possible consultation and other services to government and industry.

These specialized research facilities include the Computer Center, Institute of Ecology, Marine Institute, Institute of Natural Resources, Institute for Behavioral Research, Institute of Comparative Medicine and the University Research Park. The park contains several University research laboratories as well as a number of federal, state and private laboratories which work closely with the University.

Service

The service function of the University expands the knowledge and expertise of the teaching and research faculty beyond the physical limits of the Athens campus, applying University resources to problems and situations throughout the state for the benefit of Georgia citizens.

The Georgia Center for Continuing Education, the Cooperative Extension Service, the Institute of Government, the Institute of Community and Area Development, the Rural Development Center in Tifton, the Marine Extension Center at Skidaway Island and the service efforts of each of the University's 13 schools and colleges play an important part in assisting Georgia's residents to improve the quality of life.

ACCREDITATION

The University of Georgia is fully accredited by the Southern Association of Colleges and Schools. In addition, a number of the University's 13 colleges and schools are further accredited by appropriate educational associations.

RESOURCES

The Athens Campus

The first buildings of the University were built in a primeval forest. The town of Athens, which grew up about the University community, now ranks as one of the major cities of the state, yet retains much of its Old South charm.

The North Campus of the University, in the heart of Athens, contains thirty-seven major buildings that house a large part of the College of Arts and Sciences, the School of Law, the College of Business Administration, the School of Environmental Design, and the School of Journalism. Noteworthy among these buildings are Old College (1801), New College (1823) Demosthenian Hall (1824), the University Chapel (1832) and Phi Kappa Hall (1834). The Ladies' Garden Club Founders Memorial Garden enhances the area near the Landscape Architecture Building.

On the South Campus forty major buildings house the College of Agriculture, the College of Education, the School of Forest Resources, the School of Home Economics, the School of Pharmacy, the School of Social Work, the College of Veterinary Medicine, the Georgia Center for Continuing Education, the Coliseum, the Science Center, and the Boyd Graduate Studies Research Center.

These campuses and adjacent lands used by the College of Agriculture and the School of Forest Resources cover approximately 3,500 acres.

Libraries

The resources of the libraries of the University are available to the students and faculties of all colleges and schools. The libraries consist of the Main Library (Ilah Dunlap Little Memorial Library), the Science Library, and the Law Library. During 1974–75, the new Russell addition to the Main Library was opened, greatly increasing library space.

Collections of particular value include the DeRenne Library of Georgia and Southern historical material, which contains the original Constitution of the Confederate States; the Moore Collection of Southern history; the Keith Read Collection of Georgia manuscripts; and some early Georgia colonial manuscripts originally owned by the Earl of Egmont, first president of the trustees of the Georgia colony; and the extensive library, consisting chiefly of Southern literature and history, presented by Felix Hargrett. The mathematical collection, based on the 13,000-volume library of the American Mathematical Society acquired in 1951, is one of the best in the country.

The libraries contain United States government publications and maps by the Army Map Service. The document collection contains many publications of the states, the League of Nations, the United Nations, and other international organizations. Current subscriptions for more than 20,000 periodicals and newspapers are augmented by publications of important universities and scholarly societies.

Laboratory Facilities

The Science Center consists of six buildings housing the biological sciences, chemistry, physics, geography and geology, food science, and the animal sciences. All have well-equipped laboratories for instruction and research. The School of Pharmacy, the College of Agriculture, the School of Forest Resources, the School of Home Economics and the College of Veterinary Medicine have extensive laboratory facilities. Modern business machines are used in accounting and business procedures courses in the College of Business Administration, and the School of Journalism maintains a press room and a radio-television studio for practical training. The Computer Center, which ranks among the most powerful installations in higher education in the United States, is located on south campus in the Boyd Graduate Studies Research Center.

ATHENS

Georgia's "Classic City," Athens blends the old with the new. Careful to preserve its "Old South" charm and heritage, as reflected in its Federal, Greek Revival, and Victorian architecture, the city also has made great strides in developing its cultural and industrial resources.

Athens, the county seat of Clarke County, is located about 70 miles east of Atlanta. Athens is served by air and bus.

The city population, according to the 1970 U.S. census, was placed near 45,000; the area population in 1970 was about 65,000. A "college town" in every sense of the word, Athens appreciates its university population, while recognizing its obligation to all residents to grow independently of the University.

Athen's elevation is 600 to 800 feet above mean sea level. Because of its geographic location, the city is sheltered from much of the extreme weather of the winter season. Mean temperature for January, the coldest month, is 43° F., and for July, the warmest month, 79° F. Average minimum and maximum temperatures for January are 33° and 53° F., and for July, 68° and 89° F. Average rainfall is 50.42 inches.

Athens is served by two daily newspapers, a weekly newspaper, and the Atlanta newspapers; four local radio stations, plus the University's radio station, WUOG-FM; network television by direct reception or cable from Atlanta, Augusta, Spartanburg and Greenville, S. C., and Asheville, N. C., plus WGTV, the University's educational station; two hospitals offering comprehensive health care and service; and more than 75 churches.

ADMISSION

GENERAL REQUIREMENTS

Applicants must be sixteen or older.

Each applicant's record should reflect promise of growth, seriousness of purpose, and a sense of social responsibility. The University reserves the right, in every case, to reject any applicant whose general records do not indicate success in the University environment, notwithstanding the completion of other requirements.

The University also reserves the right to examine further any applicant by the use of psychological, achievement, aptitude tests, and personal interview.

The University of Georgia complies with the Civil Rights Act of 1964, and is an Affirmative Action/Equal Employment Opportunity institution. Admission and employment are not influenced by race, sex, color, religion or national origin. Additionally, the University is actively involved in affirmative action recruitment.

Rules Governing the Classification of Students as Residents and Non-Residents in the University System of Georgia.

1. (a) If a person is 18 years of age or older, he or she may register as a resident student only upon a showing that he or she has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
   (b) No emancipated minor or person 18 years of age or older shall be deemed to have gained or acquired in-state residence status for fee purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this state.
   (c) A clear demonstration of intent includes registering to vote, licensing any vehicles driven, and obtaining a personal driver's license. If person is employed, the payment of income tax to the State of Georgia is a demonstration of residency intentions.
2. If a person is under 18 years of age, he or she may register as a resident student only upon a showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
3. A full-time employee of the University System and his or her spouse and dependent children may register on the payment of resident fees even though he or she has not been a legal resident of Georgia for the preceding twelve months.
4. Non-resident graduate students who hold teaching or research assistantships requiring at least one-third service may register as students in the institution in which they are employed on payment of resident fees.
5. Full-time teachers in the public schools of Georgia and their dependent children may enroll as students in the University System institutions on the payment of resident fees, when such teachers have been legal residents of Georgia for the immediately preceding nine months, were engaged in teaching during such nine month period, and have been employed to teach full-time in the public schools of Georgia during the ensuing school year.
6. All aliens shall be classified as non-resident students; except, an alien who is living in this country under a visa permitting permanent residence shall have the same privilege of qualifying for resident status for fee purposes as a citizen of the United States.
7. Foreign students who attend institutions o the University System under financial spon-

sorship of civic or religious groups located in this State, may be enrolled upon the payment of resident fees, provided the number of such foreign students in any one institution does not exceed the quota approved by the Board of Regents for that institution.

8. If the parents or legal guardian of a minor change his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of twelve consecutive months on the payment of resident fees. After the expiration of the twelve month period the student may continue his registration only upon the payment of fees at the non-resident rate.
9. In the event that a legal resident of Georgia is appointed as guardian of a non-resident minor, such minor will not be permitted to register as a resident student until the expiration of one year from the date of court appointment, and then only upon proper showing that such appointment was not made to avoid payment of the non-resident fees.
10. Military personnel stationed in Georgia and on active duty and their dependents will be assessed resident fees.
11. Questions concerning residency for fee-payment purposes should be directed to one of the following persons:
    Undergraduate applicants for admission: Director of Admissions, 114 Academic Building
    Graduate applicants for admission: Director of Graduate Admissions, 534 Boyd Graduate Studies Center
    Currently enrolled students: Associate Registrar, 102 Academic Building.

How to Apply for Admission

Applications for undergraduate admission may be obtained from the Admissions Office, University of Georgia, Athens, Georgia 30602. Completion of ALL forms and requirements is mandatory before the applicant's request for admission can be considered. Completed forms must be received at least 20 days prior to the registration date and must be accompanied by a non-refundable $10.00 check or money order to cover the expense of processing the application. See the Financial section of this bulletin for complete explanation of fees.

If the application forms, CEEB Scholastic Aptitude Test scores, and other required records of the applicant are found to be complete and in proper order, the applicant will be evaluated in terms of predicted grade point average, scholastic aptitude, biographical data, and the probability of completing the requirements for the desired degree without regard to race, sex, color, religion, or national origin.

Acceptance of each applicant will be determined by the Faculty Admissions Committee subject to the right of appeal as provided in the University System.

Specific information concerning housing, orientation, pre-registration and transferred courses is sent to the student following his official acceptance.

The University reserves the right to terminate acceptance of application forms when enrollment limits are reached.

Test Requirements

The College Entrance Examination Board's Scholastic Aptitude Test is required of all freshman applicants.

Students who have had at least two years of foreign language in high school must take the College Board Achievement Test in that language. Optional achievement tests which may be taken for advanced credit include English, chemistry, biology, physics, American or European history, and mathematics.

Results of these tests must be filed with the Director of Admissions by the required date. Contact the Director of Admissions for the required dates for each registration period.

Information for making application to take the required tests may be obtained from the high school principal or counselor, or directly from College Entrance Examination Board, P.O. Box 592, Princeton, New Jersey 08540.

Recommended High School Curriculum

Prospective freshman applicants are encouraged to take college preparatory subjects in high school which include:

	Recommended	**Minimum**
English	4 years	4 years
Math (at least one year of algebra)	4 years	2 years
Science	4 years	2 years
History	4 years	2 years
Foreign Language	4 years	

A minimum of sixteen courses is required during the four years of high school. Any academic course can be included in the six additional minimum units. Two years of foreign language are advised for students enrolling in the College of Arts and Sciences; and trigonometry, geometry, chemistry, and physics are advised for any Bachelor of Science degree major.

Grade Average

Freshman applicants who qualify under the above subject requirements must have a predicted grade point average which indicates the student has the ability to pursue effectively the educational program of the University. The predicted grade point average is based upon high school record and College Entrance Examination Board scores.

Choice of School or College

A student should register in the school or college in which lies his major interest. If undecided, the student should carefully review this bulletin to determine which school or college more nearly meets his interest.

Transfer Students

Transfer students must comply with the foregoing regulations, requirements, and dates for filing the completed applications.

Applicants must request that all official transcripts of studies pursued at any other colleges or universities be sent to the Director of Admissions. These transcripts must provide a statement of honorable dismissal. A student who is on probation or has been dismissed from another institution may not enter the University.

Credit that the University will allow for work done in another institution within a given period of time may not exceed the normal amount of credit that could have been earned at the University during that time. A maximum of 105 academic quarter hours from a junior college, or 150 academic quarter hours from a senior college may be applied toward a degree. In order to earn a baccalaureate degree from the University, a minimum of 90 quarter hours in residence is required.

Students transferring to the University who have completed some or all of the core curriculum requirements at another unit of the University System will receive full transfer credit.

In-state transfer students with an overall average of 2.0 or better in their previous college work will be considered for admission. However, in order to be assured of admission, transfer students should have an over-all average of 2.5 or better in their previous college work. The number of hours of D credit which can be transferred will not exceed 20% of the hours earned with a grade of C or better. Credit for English 101 will be given only for grades of C or better.

College credit will not be allowed for such courses as remedial English or mathematics or courses basically of secondary school or terminal junior college legel.

Courses from a community or junior college that would be upper division at the University are generally non-transferrable.

Evaluation of Transfer Applicant

Transfer applicants will be evaluated, reviewed and accepted in the same manner as freshman applicants. The University reserves the right to deny admission to any transfer applicant when, in the opinion of the admissions committee, the academic standards or the admission procedures of any institution previously attended are not equivalent or comparable to those at the University.

Special Admissions

Persons over 18 years of age and veterans whose secondary schooling was interrupted by military service may be admitted by presenting a State Department of Education Certificate of High School Equivalency and by passing entrance examinations as determined by the admissions committee. In general, the admissions committee asks that applicants take the CEEB Scholastic Aptitude Test. No student having attended secondary school during the previous 12 months will be eligible for admission by this method.

Students will be considered for admission on this basis only after their class has graduated from high school.

Admission of High School Juniors

Under exceptional circumstances, students may be admitted to the University at the end of their junior year in high school. These students must have outstanding records in college preparatory subjects and must present scores on the combined verbal and mathematics sections of the Scholastic Aptitude Test satisfactory to the University faculty admissions committee. The recommendation of the student's high school principal or counselor will also be considered by the admissions committee.

Graduate and Professional Students

Students in the professional programs of law, pharmacy and veterinary medicine must meet additional admission requirements found in the appropriate sections of the bulletin.

Students in graduate programs should consult the Graduate School Bulletin or the dean of the particular school or college for a list of requirements.

The University reserves the right to reject any applicant whose record indicates inadequate preparation to do college work even though he may meet the entrance requirements set forth above.

Applicants for Readmission

Students who are out of the University for one or more quarters (exclusive of the summer quarter) must make application for readmission at least 20 days (30 days for graduate students) prior to the published date of registration. Application for readmission forms for undergraduate students are available from the Office of Admissions. Graduate students should contact the graduate admissions office.

Orientation

Undergraduates who enter for the fall quarter will have the opportunity to choose one session of a summer orientation program to visit the campus for general orientation, academic advisement, and registration. Orientation schedules are sent early each spring to those students who have been accepted for the following fall quarter.

New students accepted for winter, spring, or summer quarter will have the opportunity to attend a one-day orientation/pre-registration session. Accepted students are notified of this date by the Admissions Office.

Registration and Late Registration Penalties

An applicant for admission whose credentials have been approved by the director of admissions but who does not register at the scheduled time will receive information on late registration procedure on the day before classes begin.

Registration dates are listed in this catalog. A student who fails to register on the scheduled days will be subject to penalties of $25 as listed in the financial information section. No student will be admitted after the expiration of the fifth day beyond scheduled dates except by special permission.

Medical History

New students and former students who have been absent from the University for over three quarters must have a complete medical history form on file with the University Health Service prior to registration. Medical history blanks will be sent with notification of acceptance for admission and should be returned to the Medical Records Department, University Health Service.

Admissions and Registration of Persons 62 Years of Age or Older

Pursuant to the provisions of an amendment to the Georgia Constitution, the Board of Regents established the following rules with respect to enrollment of persons of age 62 or older in units of the University System. Effective with the beginning of Fall Quarter, 1977, to be eligible for enrollment under the provisions of this amendment such persons:

(1) Must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other comparable written documentation of age to enable the registrar to determine eligibility.

(2) May enroll as regular students in courses offered for resident credit on a "space available" basis without payment of fees, except for supplies or laboratory or shop fees.

(3) Must meet all System and institution admission requirements to include High School record and SAT Scores.

(4) Will have all usual student and institutional records maintained.

(5) Must meet all System, Institutional, Legislated degree requirements such as Regents' Test, Major Area Exam and History and Constitution Instruction or Exams, if they are degree seeking students.

(6) May not enroll in Dental, Medical, Veterinary, or Law Schools under the provisions of this policy.

FINANCES AND AID

FINANCIAL INFORMATION

Estimated Fees and Expenses

The estimated annual expenses of a student at the University vary from $2,000 to $2,500. This estimate includes University fees and cost of books, room, board and laundry. It does not include travel, clothing, and incidental expenses.

Student of forestry, law, and veterinary medicine, and non-resident students will find the cost somewhat more because of higher fees required.

The University reserves the right to change its fees, charges, rules, and regulations at the beginning of any quarter and without previous notice. This right will be exercised cautiously.

Fees and Expenses

Application Fees	$10.00

Required of new undergraduate, graduate, or irregular students applying for admission, and covers expenses of processing application only. Make check or money order payable to University of Georgia. DO NOT SEND CASH.

Fee Deposit—Law School	$50.00

Required of a new student accepted by the Law School to reserve his place in the class. Must be paid by April 1 of the year in which he seeks admission, or within 30 days of acceptance, whichever comes later. Deposit is nonrefundable, but is applicable toward payment of the first quarter matriculation fees.

Fee Deposit—College of Veterinary Medicine	$100.00

Required from each applicant accepted for admission to the College of Veterinary Medicine. Must be received within three weeks after the date of issuance of the acceptance. If deposit is not received within the specified time, an alternate candidate will be called to fill the place of the accepted applicant. Deposit is nonrefundable, but is applicable toward payment of the first quarter matriculation fees.

Auditor's Fee

Persons desiring to attend courses or lectures without examination or credit may register to audit a course. Fees for auditors are the same as those for students registered for credit.

Breakage Deposit and Course Fees

There are no general laboratory fees, but special fees, including breakage fees, are required for a few courses and some field trips. Students are held responsible for any breakage they cause.

Special Fees and Charges

Service Charges for Late Registration	
Third or fourth day	$25.00
Service Charge for Late Payment of Housing Fee	$25.00

Special Examination Fee

The University reserves the right to charge a fee for any special examination given at the request of a student.

Transcript Fee	
First copy	No charge
Each additional copy	$ 2.00
Graduation Fee	
Undergraduate degree	$10.00
Master's degree	10.00
Doctor's degree (includes hood)	25.00
College of Veterinary Medicine/ School of Law	13.00
Certificate of American Studies for Foreign Students	5.00
Graduate Record Examination	
Admission requirement for all advanced general degree programs and certain professional degree programs	10.50

Matriculation Fees

For Students With 12 or More Quarter Hours

	Maintenance	Non Resident	Student Activities	Student Athletic*	Transportation Fee	Health	Total
Regular students residents	$185.00		$10.50	$5.00	$5.50	$28.00	$234.00
Non-resident regular students	185.00	317.00	10.50	5.00	5.50	28.00	551.00
Forestry students	189.00		10.50	5.00	5.50	28.00	238.00
Non-resident forestry students	189.00	317.00	10.50	5.00	5.50	28.00	555.00
Law students	200.00		10.50	5.00	5.50	28.00	249.00
Non-resident law students	200.00	317.00	10.50	5.00	5.50	28.00	566.00
Veterinary medicine students	220.00		10.50	5.00	5.50	28.00	269.00

(Payable each quarter during registration period.)

For Students With Less Than 12 Quarter Hours

Students who are residents of the state of Georgia	$15.00 per quarter hour**
Law students	$17.00 per quarter hour**
Veterinary medicine students	$19.00 per quarter hour**

Each student with less than 12 quarter hours must also pay the following:

Health fee	$28.00
Student activity fee	10.50
Student athletic fee*	5.00
Transportation fee	5.50

(Payable each quarter during registration period.)

Note: Students who enroll for six hours or less have the option of waiving student activities, student athletic, and health fees. This waiver must be elected at the time of registration.

For Other Programs

Area Teacher Education Service programs	$20.00 per quarter hour (non-refundable)
Off-campus graduate courses	$20.00 per quarter hour (non-refundable)
Saturday class program	$15.00 per quarter hour
Saturday class program	

(Payable each quarter during registration period.)

**The student athletic fee is assessed for fall, winter, and spring quarters only.*

***Non-resident students with less than twelve quarter hours must pay a non-resident fee of $26 for each quarter hour of work taken. This is in addition to the quarter hour matriculation rates charged to resident students.*

Method of Payment

Fees may be paid in one of the following manners:

By Mail

Pre-addressed envelopes will be provided for mailing fee and dorm cards along with check or money order (do not mail cash) to the Treasurer's Office. Payment must be received by the fee payment deadline to avoid schedule cancellation.

At Coliseum

Students who register at the Coliseum during late registration may pay by check or money order for the exact amount of their fees. All cash payments must be processed at the cashier's window. (DO NOT MAIL LATE REGISTRATION FEES.)

At Cashier's Window

Payment may be made by cash or check during cashiering hours at the cashier's window located on the first floor of the Business Services Building, 424 East Broad Street.

At Night Depository
Payment may be made after hours until late fee payment deadline at the night depository located at the front of the Business Services Building, 424 East Broad Street.

Time of Payment

Pre-Registration
Students registered during the current term for the next quarter must pay fees approximately two weeks prior to the first day of classes. Those who fail to pay fees by the deadline will be dropped from the class rolls, and the class openings will be made available to others who register late.

Late Registration
Fees, deposits, and charges for room and board are due and payable at the time of late registration. A student is not officially registered at the University until such fees and charges are paid in full. A late registration service charge will be assessed after the first day. If payment is not made by the end of the late registration period, the student's registration will be cancelled. Exceptions to the time of payment are outlined below.

Deferred Payment of Fees

Students who meet one of the following requirements may defer payment upon approval by the Treasurer's Office, Banking and Trust Department, Business Services Building, 424 East Broad Street:

1. Students whose fees are guaranteed and will be paid by an outside agency under an agreement with The University of Georgia up to the amount authorized for a specific academic quarter.
2. Students who have a University-administered loan or scholarship in process up to the amount of the aid granted for a specified academic quarter.
3. Foreign students who have a certificate or other acceptable documented evidence that payment of fees will be made after a statement of charges for the student has been presented for payment. The deferment will be limited to the amount stated in the certificate or other document for a specified academic quarter.
4. Students who are recipients of fellowships, assistantships, or stipends administered by the University may defer their fees in an amount not to exceed two-thirds of the total fees assessed.

Deferred fees will be due and payable as follows:

fall quarter	—November 1
winter quarter	—February 1
spring quarter	—May 1
summer quarter	—July 1

Fee Refunds

Students who formally withdraw from the University prior to the first day of classes are entitled to a refund of 100 per cent of fees paid for that quarter; within one week following the first day of classes, 80 per cent; from one to two weeks after the first day of classes, 60 per cent; from two to three weeks after the first day of classes, 40 per cent; from three to four weeks after the first day of classes, 20 per cent. Refunds will be made at the end of a quarter. No refunds for reduction in hours after the drop/add period are allowed unless such reduction is the fault of the University.

The following are not entitled to any refund of fees paid: students who withdraw after a period of four weeks has elapsed from the scheduled registration date; students suspended for disciplinary reasons; students who leave the University when disciplinary action is pending, or who do not formally withdraw.

Information on refunds of payment for room and meals is found under "Housing."

Scholarship and Financial Aid Information

The University and its colleges and schools make available to qualified students a number of scholarships which recognize achievement and/or the need for additional income to defray educational expenses. Most of these scholarships are administered through the office of financial aid. Information on scholarships may be found in the section entitled "Student Services" under "Student Financial Aid" and in Appendix B.

ACADEMIC PROGRAM

The statements set forth in this catalog are for informational purposes only and should not be construed as the basis of a contract between a student and this institution. While the provisions of this bulletin ordinarily will be applied as stated, the University of Georgia reserves the right to change any provision listed in this catalog including, but not limited to, academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office, in the office of the academic deans and in the Office of the Vice President for Academic Affairs. It is especially important that each student knows that it is his/her responsibility to keep himself/herself apprised of current graduation requirements for his/her particular degree program.

THE COLLEGE YEAR

The college year has four quarters of approximately eleven weeks each: fall quarter, latter part of September to Christmas holidays; winter quarter, first week in January to middle of March; spring quarter, March to early June; summer quarter, June to latter part of August. Exact quarter dates appear in the University calendar.

Students may enter the University at the beginning of any quarter. Only one commencement will be held each year, in June.

UNDERGRADUATE AND PROFESSIONAL DEGREES OFFERED BY THE UNIVERSITY

The University will confer upon candidates who have satisfied the prescribed regulations and conditions degrees as follows:

A. *In the College of Arts and Sciences*, the degrees of Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Science in Chemistry (B.S. Chm.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B. Mus.), Bachelor of Science in Physics (B.S. Pcs.), Bachelor of Science in Physics and Astronomy (B.S. Pcs. & Ast.);
B. *In the School of Pharmacy*, the degree of Bachelor of Science in Pharmacy (B.S. Phar.);
C. *In the College of Agriculture*, the degrees of Bachelor of Science in Agriculture (B.S.A.), Bachelor of Science in Agricultural Engineering (B.S.A.E.), and Bachelor of Science in Environmental Health (B.S.E.H);
D. *In the School of Forest Resources*, the degree of Bachelor of Science in Forest Resources (B.S.F.R.);
E. *In the College of Education*, the degree of Bachelor of Science in Education (B.S.Ed.);
F. *In the College of Business Administration* the degrees of Bachelor of Business Administration (B.B.A);
G. *In the School of Journalism and Mass Communication*, the degree of Bachelor of Arts in Journalism (A.B.J.);
H. *In the School of Home Economics*, the degree of Bachelor of Science in Home Economics (B.S.H.E.);
I. *In the School of Social Work*, the degree of Bachelor of Social Work (B.S.W.);
J. *In the School of Environmental Design*, the degree of Bachelor of Landscape Architecture (B.L.A.)

The University System of Georgia Studies Abroad Program provides foreign study opportunities for serious and selected students of Georgia through charter and group service arrangements available to Educational Institutions. The following summer language programs are now available: French in Dijon, German in Erlangen, Spanish in Valencia and Latin American Studies at Ibero-American University in Mexico City. These courses earn "on campus" credit. Additional information may be obtained from the academic department involved.

DUAL DEGREES

A graduate of any program may receive the baccalaureate degree of any other program by completing the additional studies required in that program and by meeting residence requirements for the second baccalaureate degree. The minimum resident requirement is 45 quarter hours.

MILITARY COMMISSIONS

A student who satisfactorily completes the advanced ROTC program may be commissioned as second lieutenant in the U.S. Army or U.S. Air Force in conjunction with the degree. *Detailed information concerning the Army and Air Force ROTC programs may be found under "Division of the Armed Services."*

DEGREE REQUIREMENTS

The Core Curriculum

The core curriculum was established within the University System of Georgia as a means of facilitating the transfer of credit for students at the lower division level as they work toward baccalaureate degrees within University System colleges and universities. The various institutions within the University System, in establishing their core curricula, provide for (1) 90 quarter credit hours of which a minimum of 60 are in general education and 30 in major related courses; (2) assurances that all courses satisfactorily completed in the core curriculum of any unit of the University System will be acceptable and transferable to other units of the University System; and (3) the preservation of the maximum possible amount of institutional autonomy.

Briefly, the University core curriculum includes:

		HOURS
AREA I	HUMANITIES, including, but not limited to, grammar, composition and literature.	20
AREA II	MATHEMATICS AND NATURAL SCIENCE, including, but not limited to, mathematics and a 10-hour sequence of laboratory courses in the biological and physical sciences.	20
AREA III	SOCIAL SCIENCE, including, but not limited to, history and American government.	20
AREA IV	COURSES RELATED TO MAJOR, appropriate to the program of individual student.	30

Each school or college of The University of Georgia which offers a baccalaureate degree program has developed its core program and complies with the University System core curriculum requirements. Detailed information is given in the sections for the individual schools and colleges in this bulletin.

Examinations on the Constitutions

Examinations on the Constitution of the United States and that of the state of Georgia are required of all persons receiving a degree from the University, including those transferring Political Science 101 from institutions outside the state unless exempted by courses dealing with these constitutions. Approved courses for exemption are as follows:

Federal Constitution

POL 101
POL 105H
POL 418
POL 408
POL 483
POL 484
HIS 251 and 252
HIS 351 and 352
HIS 415E
HIS 353H and 354H

Federal and Georgia Constitution

POL 101 (taken in Georgia)
POL 105H (taken in Georgia)
POL 418 (taken in Georgia)
HIS 417M and 415E

Georgia Constitution

SOS 104
HIS 417M
POL 405
POL 418 (taken in Georgia)

Examinations are given once each quarter; dates are announced in the schedule of classes.

Students who fail the examination must satisfy the requirement with course work. No re-examination is permitted.

Examinations on United States and Georgia History

An examination on the history of the United States and Georgia is required of all persons receiving a degree from the University, unless exempted by one of the following courses: History 100, 251, 252, 353H, 354H. No re-examination is permitted. Examinations are given to freshmen during orientation and once each quarter to upper classmen. Examination dates are announced in the schedule of classes.

Regents Testing Program

The Board of Regents of the University System of Georgia requires all students graduating from colleges and universities within the University System to possess certain minimum skills of reading and writing. All students enrolled in the University System must fulfill this requirement for graduation by participating in The Regents Testing Program. Students will be required to take the examination in the quarter after they have completed their 45th degree quarter credit hour and if they have not taken it previously, they must take the test in the quarter after they have completed their 75th hour. Students will not be certified for graduation until they have passed the test. Students must obtain a ticket of admission to the Regents Test at the Office of Testing and Evaluation at least one week prior to the date of the test.

Students who fail must retake and pass the test. An appropriate program of remediation will be provided and deficient students may be required to participate in the program prior to retaking the test.

Regents' Senior Exit Examination

As directed by the Board of Regents, each graduating senior must take an exit examination. It is the responsibility of the students to determine from their department head or academic advisor the test which has been designated as the departmental senior exit examination. Minimum scores needed to satisfy the exit examination requirement may be determined by departments. The score itself will not become a part of the student's permanent record. Only a notation, "senior exit examination satisfied," will be posted on the student's record. Seniors may take the test anytime during their senior year. Registration procedures and test dates will be published each quarter in the official University Schedule of Classes.

Governor's Intern Program

The Governor's Intern Program provides a unique academic experience while giving students a practical, first-hand look at agencies in state and local governments. The internships are full-time and last ten weeks. The earning of academic credit, while working on a specific agency project, is essential to a student's participation in the program. The amount of credit and all matters pertaining to that credit are left to the discretion of each student's school. A report is submitted by each intern to the Governor's Intern Program after each project's completion. Upon approval by the staff, the report is filed in the Georgia State Archives for future reference. The length of an internship is equal to that of a quarter's work at the University of Georgia. Applications may be obtained from the Office of the Vice President for Academic Affairs, Old College.

Division of Special Studies

The Division of Special Studies offers a unique opportunity to develop academic skills which enhance a student's ability to benefit from higher education. The Special Studies program consists of daily educational experiences and laboratories in reading, English, and mathematics; optional experiences for individual growth; and group experiences in career-life planning and academic success. The Special Studies faculty and staff have developed an educational program which allows each student to develop beginning at his or her own ability level and continuing at his or her own pace. Programs offered by the counseling staff will focus on individual student needs and assist them in integrating formal learning experiences with personal life situations.

SSR 099 Reading

The course offers exposure to various types of reading that freshmen encounter in their core curriculum courses. Techniques specific to reading expository material (textbooks and popular non-fiction) and expressive literature (short stories and novels) are taught. Skills in test-taking, library reference and speed-reading also receive emphasis.

SSE 099 English

A classroom/laboratory situation which is designed to allow each student to increase proficiency in oral and written communication skills. Class time is primarily devoted to discussing common problems in effective usage and correct mechanics in writing, developing fluency in writing, communicating effectively in various modes of discourse, and discovering effective strategies for students to evaluate their own progress in the development of written communication Skills.

SSM 099 Mathematics
Basic knowledge and concepts in the practical world will be introduced, followed by a demonstration of how math can be utilized to describe and understand them. Through an elaboration of these basic concepts students will acquire the skills required in future academic endeavors.

Counseling
A variety of experiences will be offered including vocational exploration groups, academic success groups, one-to-one counseling, personal growth groups, developmental counseling and academic advising.

Placement Tests
All students accepted into the Division of Special Studies must take placement tests. The purpose of these tests is to assess each student's present level of proficiency in reading, writing and mathematics so that they may be placed in appropriate courses. Placement tests are administered several times during the year in the Psychology-Journalism Auditorium from 9:00 a.m. until noon. Students admitted to the program will be advised of testing dates in their letter of acceptance.

Registration and Course Selection
Special studies students register for courses under the advisement of staff and counselors in accordance with the placement test results. If the test results indicate that a student will be placed in only one or two of the three Special Studies courses, then that student may include courses from the University core curriculum in his schedule. While enrolled in the Division of Special Studies, students will receive credit for core curriculum work completed, but no Special Studies course carries graduation credit.

Exiting Special Studies
Students enrolled in Special Studies courses have a minimum of one quarter and a maximum of three quarters to complete course requirements and obtain minimal exiting scores on a standardized test which is a requirement of both the Board of Regents and the University of Georgia. Upon successful completion of Special Studies requirements, a student will be transferred to his or her chosen college within the University (i.e., Arts and Sciences, Education, Business Administration, etc.)

Students must be referred to the Division of Special Studies by the Admissions Office.

Tutorial Program—Skills Laboratory

The University makes available free tutorial assistance in a number of lower division subjects areas, including but not limited to English, math and foreign languages. In addition, students may receive help from the Verbal Skills Lab in areas of reading and writing. The Tutorial Program-Skills Laboratory is located in Room 202, South P-J Auditorium.

English

English 101 and 102 (English Composition) are required for all undergraduate degrees from The University of Georgia. A grade of 2.0 or better is required for English 101 and an average of 2.0 or better is required for both courses.

Basic Physical Education

1. All students entering the University for Fall Quarter, 1977, and thereafter, who matriculate for their first baccalaureate degree are required to pass five hours of basic physical education. This requirement may be satisfied by successful completion of any combination of basic physical education courses in health, physical fitness, and/or life-time skills (available as one, two, or three credit hours), including credits earned by passing proficiency examinations. This physical education requirement shall not apply for those entering a second or subsequent bachelor's degree program. A maximum of five credit hours may be applied toward a degree.
2. All baccalaureate degree candidates who entered the University prior to Fall Quarter, 1977, are required to satisfy six courses of basic physical education. Students entering the University with ninety hours or more credit will be considered to have met this requirement. Students transferring fewer than ninety hours will exempt one course in basic physical education for each fifteen hours of credit transferred. A maximum of six credit hours may be applied toward a degree.

The above requirements are applicable to all students except as follows:

1. Veterans who have served 180 days or more may receive credit for five basic physical education courses at one hour each or, six basic physical educations courses at one hour each, depending on date of matriculation. To establish credit, veterans will be required to

present a copy of their DD214 form to the Admissions Office.

2. Adaptable physical education classes are available for handicapped students.

MISCELLANEOUS ACADEMIC REGULATIONS

Units of Credit

The unit of credit is the quarter hour, representing one hour of class work per week for one quarter or its equivalent in other forms of instruction. Two or sometimes three hours of laboratory work are considered as the equivalent of one hour of class work.

Most University courses meet five times a week for one quarter and carry a credit of five quarter hours.

Academic Work Load

The normal academic work load is 15 hours per quarter for undergraduates and 10 hours per quarter for graduate students. In programs requiring more than 180 hours for graduation the load per quarter may be somewhat higher. Undergraduate students carrying fewer than 12 hours per quarter and graduate students carrying fewer than 10 hours per quarter will not be certified as full time students.

Residence

The minimum residence requirement for a baccalaureate degree is 90 quarter hours.

Students who present acceptable college credits earned before September 1960, or who are enrolled for a second baccalaureate degree, may satisfy the residence requirement by completing in residence 45 hours in courses numbered 200 and above with a cumulative average grade of 2.0 or better.

Students enrolled in the combined B.S.-M.D. program with the Medical College of Georgia, or hose enrolled in the Dual Degree program with he Georgia Institute of Technology, may satisfy he residence requirement at the University by ompleting 45 hours in residence in courses approved by the Dean of the Franklin College of rts and Sciences.

ndependent Study

aculty members of several of the University ystem universities and colleges offer courses for non-residence credit through the central Independent Study office, at the University of Georgia's Center for Continuing Education. Credits earned through this program are recorded at the University and may be used for degree requirements according to the regulations of the college or university from which the student plans to gradudate. A bulletin is available on request from Independent Study Office, The University of Georgia Center for Continuing Education, Athens, Georgia 30602.

University Evening Classes

The Georgia Center for Continuing Education conducts evening credit classes for adult students who are unable to attend the University as full-time students. Admission is restricted to qualified applicants whose permanent residence is within commuting distance of Athens or for students who will be simultaneously enrolled in regular University classes.

Students receive residence credit for evening classes with no limit on the maximum number of hours which may be applied toward a degree. Present course offerings allow students to obtain about one-half of their total degree program during the evenings. Students majoring in business administration may complete a degree program with a combination of evening classes and late afternoon classes offered through the regular University program.

Evening students may register for a maximum of two courses per quarter. Classes generally meet twice a week during the quarter, with each quarter running concurrent with the regular University quarter. Class schedules and other information may be obtained at the Evening Class Office, Center for Continuing Education, Athens, Georgia 30602.

Extension and Independent Study Credit

The total number of hours that may be earned toward a degree at the University by either extension or independent study or both shall not exceed one fourth of the hours required for graduation.

Military or Extra-Institutional Experience and Credit

Credit may be granted in certain subject areas for satisfactory completion of the College Level Examination Program Tests. Students with prior credit in the field or a related field of the subject area involved will not be granted credit. The University administers these tests through the Testing and Evaluation Center. In general, they are also administered by the education officer on military posts or by centers established by the College Board, of which the University is one.

United States Armed Forces Institute (USAFI) courses are not recognized by the University unless they are completed through an accredited institution which grants recognized college credit for same. Such courses are regular correspondence courses and are administered under the Cooperating College Program of USAFI.

Inquiries concerning in-service training should be directed to the Director of Admissions. Evaluations of this training will not be made until such time as the student is accepted for study on the University campus.

Classification of Students

In the undergraduate schools and colleges, a student will be classified according to the number of academic quarter hours he/she has earned.

Classification	*Hours Earned*
Freshman	Less than 45 hours
Sophomore	At least 45 hours
Junior	At least 90 hours
Senior	At least 135 hours

Junior Division and Senior Division

Some of the undergraduate schools and colleges further classify their students as junior division students or senior division students. In general, a junior division student is a freshman or sophomore; a senior division student is a junior or senior, and has completed at least 90 academic hours.

A Law student or an Honors student may enroll in a graduate course with the approval of his/her adviser, the course instructor, the graduate coordinator of the department in which the course is offered, and the Graduate Dean. Approval must be secured prior to registering for the course. Appropriate applications are available in the Honors office and in the Law School.

Grading System

The grading scale for The University of Georgia is as follows:

A	Excellent
B	Good
C	Satisfactory
D	Passing
F	Failure
WF	Withdrew, failing

I Incomplete. This grade indicates that a student was doing satisfactory work but, for non-academic reasons beyond his/her control, was unable to meet the full requirements of the course. If an "I" is not satisfactorily removed after three quarters of residence, the grade "I" will be changed to the grade "F" by the appropriate official

W This grade indicates that a student was permitted to withdraw without penalty. Withdrawals without penalty will not be permitted after the fourteenth calendar day (date to be specified in the schedule of classes) except in cases of hardship as determined by the appropriate official.

WF This grade indicates that the student was permitted to withdraw from the course while doing unsatisfactory work. The dropping of a course under these circumstances is equivalent to a failure. This grade is included in the academic average.

S This grade indicates satisfactory participation in certain required courses. Normally S grades are given in a limited number of professional, seminar, or graduate-level courses. Credit is included in hours earned. The grade is not included in the academic average.

U This grade indicates unsatisfactory performance in certain required courses in which S grades may normally be given. No credit is given. The grade is not included in the academic average.

V This grade indicates an audit. No credit is given. The grade is not included in the academic average.

K This grade indicates that a student was given credit for the course via a credit by examination program approved by the faculty, e.g., CLEP, AP, Proficiency, etc.

Cumulative grade average is based on all residence hours attempted at the University exclusive of S and U grades.

Conversion of Letter Grades to Grade Points

For purposes of computing grade point averages, letter grades are converted into numerical equivalents:

A	4.0	**I**	*
B	3.0	**S**	*
C	2.0	**U**	*
D	1.0	**V**	*

F	0	K	*
WF	0	W	*

*Not computed

Grade Reports

Quarterly reports of grades will be mailed directly to students at their permanent address.

Grades

A minimum cumulative average of 2.0 is required to meet all undergraduate degree requirements.

Change in Grades

A grade in a course recorded by the registrar cannot be changed except in the following circumstances:

A grade of I not removed after three quarters in residence becomes an F.

Any grade will be changed upon a written statement by the instructor that the grade was a factual error.

A baccalaureate degree candidate who makes a grade of F or D in his senior year in a course numbered 200 or above necessary for his degree will have the privilege of one re-examination, provided there is no opportunity to repeat the course. Eligibility for re-examination is determined by the student's academic dean. Grades in not more than two courses may be thus changed. Permits for a re-examination should be obtained from the academic dean.

Course Numbers

Courses numbered from 1 to 99 are either noncredit or remedial courses; those from 100 to 199 are designed for freshman and sophomore (junior division) students; those numbered 200 to 299 are mainly sophomore courses but, in special instances when justified by course and curricular requirements, may be given senior division (junior and senior) classification. Courses numbered 300 to 399 are generally designed for mixtures of junior and senior division students. Courses taken by juniors and seniors along with graduate students carry the numbers 400 to 599 for undergraduates and 600 to 799 for graduate students. Courses numbered 800 or 900 are open only to gradudate students. Courses which carry an "H" suffix are Honors courses.

Changes in Courses

It is the student's responsibility to select the appropriate courses for his/her degree program. If students are uncertain as to their degree requirements, they should consult with their academic advisor/dean prior to scheduling.

Students are expected to attend classes on a regular basis during the drop/add period. A student who incurs an excessive number of absences may be dismissed from the class at the discretion of the professor.

Changes in a student's program of courses may be made only with the approval of the dean of the college or school in which the student is registered. If students find it necessary to make adjustments in their class schedules following registration they must follow the procedures listed below during the prescribed drop/add period (dates published in the schedule of classes)

1. The student obtains Section Change Card from the instructor or sectioning officer appointed by the department for each course in which he/she wishes to drop or add. A Section Change Card is required for each DROP and for each ADD. *The call number on the card must agree with the call number on the roll on which the student is to be dropped or added.*
2. The student writes name and social security number on each Section Change Card obtained and indicates that he/she is dropping or adding the course by checking the appropriate box. If the course is a variable hour course, the student must indicate on the card the number of hours for which he/she wishes to enroll.
3. The student presents Schedule and Section Change Cards to his/her academic dean for approval. Graduate students must have their Schedule approved by the Dean of the Graduate School (Room 517 Boyd Graduate Studies Building). All drop/add requests must be submitted to the Student's academic dean for approval prior to 4:00 p.m. on the final day to drop/add.
4. Fee Adjustments—Tuition is charged on a per quarter hour basis for up to 12 hours. Full tuition is charged for 12 or more quarter hours. If a student's schedule change results in a refund or additional fee being due, he/she should report to the Registrar's Office (Room 112 Academic Building) during the first week of the quarter to complete a fee adjustment form. No academic credit will be given unless all fees are paid by the end of the drop/add period.

Dropping of Courses

A student may not drop a course without the permission of the dean of his college or school.

Veterans receiving benefits must notify the director of financial aid of course load reductions.

The procedure for dropping a course is initiated in the office of the student's advisor or the dean of the college, except in cases where the instructor wishes to drop with a grade of WF a student who has had excessive absences.

A grade of W signifies that the student was passing the course at the time he withdrew. Such a grade, even if the course was dropped for medical reasons, does not relieve the student for the regular probation and exclusion rules. See "Academic Probation and Dismissal."

An undergraduate student who withdraws from a course during the first 14 calendar days of a quarter is assigned a grade of W or WF by the instructor. A student who withdraws on the 15th or subsequent academic day of the quarter (date to be specified in the Schedule of Classes) is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Dean of Student Affairs because of emergency or health reasons.

Auditing Courses

A student may audit a course with the approval of his academic dean and the department offering the course. The registration procedure is the same as registration for credit except that the auditor must attach an audit card, obtained from the department, to his registration form.

Fees for auditors are the same as those for students registered for credit. After the drop/add period, credit registrations may not be changed to audit, and audit registrations may not be changed to credit registration.

Course Challenging

In so far as accrediting policies permit, the University allows a student the opportunity to receive resident credit for courses by examination without his having attended the regular classes. Although specific standards of eligibility for challenging a course vary somewhat among the schools and colleges, in general the student must (1) demonstrate to the department in which the course is offered evidence of independent study to master the materials required in the course; (2) not be currently enrolled in the course to be challenged, nor have previously completed the course; (3) complete and file an official Course Challenge Form with the Registrar of the University.

Based upon the results of the examination, regular grades of A, B, C, D, or F are assigned for the challenged course.

Admission to Course Examinations

A student who has not registered for the course will not be admitted to the final examination, and only under extraordinary circumstances will he be admitted to the examination unless he has attended at least 50 per cent of the total class and laboratory exercises held in the course.

Forfeiture of Credit

By registering for and receiving a grade in a course for which credit hours have already been granted, either by work at the University or by transfer, a student forfeits the previous credits in that course.

Class Attendance

Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be dismissed from a class at the discretion of the professor.

Withdrawal from the University

No student is permitted to withdraw after registration for a term without notifying the Office of the Dean of Student Affairs, who shall notify the proper University officials. A student withdrawing from the University is expected to secure his parents' consent. Veterans receiving allowances under acts of Congress must notify the Director of Financial Aid. Refunds will be based on the date of such notification.

A student against whom disciplinary charges are pending will not be permitted to withdraw from the University with a clear record until such charges shall have been resolved.

In general, a student voluntarily withdrawing may return later if scholastically eligible.

Name Changes

The name carried on the permanent academic record is the name given on the application for admission-readmission. The name will be changed by the Registrar upon request to reflect changes in marital status of currently enrolled students. The name on inactive records will be the name under which the student was last enrolled.

Academic Advisement

Students placed on probation should seek the assistance of their academic adviser as soon as possible. Those with poor scholastic records are advised that unless their record improves markedly in the following quarter they should withdraw from the University to avoid compiling a poor record.

Admission to Another College or School

A student on probation or on first exclusion in one college or school within the University may not transfer to another college or school without the consent of the dean of the college to which admission is sought.

Academic Probation

A student is placed on academic probation at the end of *any* quarter in which his cumulative grade point average is below 2.0. A student may remove himself from academic probation by achieving a 2.0 cumulative average.

Academic Dismissal

A student who has been enrolled for three or more quarters is dismissed from the University if his cumulative average is below that required for the designated number of total hours attempted, as follows:

Hours Attempted	*Required Minimum Cumulative Average*
3–44	1.5
45–89	1.6
90–134	1.7
135–179	1.8
180–239	1.9
240 or more	2.0

A student will not be subject to dismissal from the University for academic deficiences until he has been enrolled for three or more quarters. A student will be considered enrolled for any quarter in which he received a grade or grades other than a W.

A student will not be dismissed from the University for academic reasons if he earned an average of 2.3 or higher on all hours attempted for the last quarter in residence, provided he was enrolled for a minimum of 10 hours for that quarter.

An undergraduate student who withdraws from a course during the first 14 calendar days of a quarter is assigned a grade of W or WF by the instructor. A student who withdraws on the 15th or subsequent academic day of the quarter (date to be specified in the Schedule of Classes) is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Dean of Student Affairs because of emergency or health reasons.

Total hours attempted consist of all hours attempted at the University (including all hours with grades of F and WF), plus all hours transferred to the University. Grades of I and W are not included in hours attempted.

Upon receiving a first dismissal, a student will be suspended from the University for a minimum of two quarters. At the end of the suspension, readmission may be granted at the discretion of the academic dean.

After a second dismissal, only through appeal to the University Faculty Executive Committee can permission to return to the University be granted. A minimum of one calendar year must elapse before a student on second dismissal may petition for readmission.

Graduation

Candidates for degrees must show that they have met all general University requirements for such matters as registration and payment of fees and special requirements of the college or school in which they have been registered.

All candidates for undergraduate degrees must file an application for graduation with the Registrar during the *first* quarter of their senior year. Students who fail to perform this duty will forfeit any equity in the adjustment of errors or omissions made in their programs or graduating on schedule.

Independent study grades and grade changes of last quarter seniors must be received by the registrar one calendar month prior to their graduation date. Students who register for their final quarter's work at another institution must delay their graduation date by one quarter to allow sufficient time for the Registrar's Office to receive, evaluate, and record such credits to their academic record.

A candidate for a degree is not required to attend graduation exercises, which are held each June. He should advise the Registrar in writing of the address to which his diploma should be mailed.

The University reserves the right to withhold the diploma of any student who has completed all academic requirements when disciplinary charges are pending or when there is a pending disciplinary action equivalent to suspension or expulsion.

PROGRAMS FOR SUPERIOR STUDENTS

Programs for superior students at The University of Georgia consist of the Advanced Placement Program and the Honors Program.

Both programs are headed by a director under the office of the Vice President for Academic Affairs and the University Council for Superior Students. Inquiries concerning the Advanced Placement Program and the Honors Program should be directed to the Director of Programs for Superior Students, The University of Georgia, Athens, Georgia 30602, telephone (404) 542–3240.

Advanced Placement Program

The purpose of the Advanced Placement Program staff is to coordinate and supervise all advanced placement activities instituted by The University of Georgia and to provide liaison among the various University units in matters concerning both advanced placement and credit by exemption in basic courses.

Generally, advanced placement tests are given to new students during summer orientation sessions prior to fall enrollment. Several sessions are especially planned for superior students and provide coordinated placement testing and academic counseling, followed by early class registration for fall quarter. Students invited to these sessions are urged to attend, as limited time during fall registration does not permit the same intensive testing and counseling procedure.

In addition to its own Advanced Placement Program, the University also participates in the Advanced Placement Program of the College Entrance Examination Board. Students making a good score on the CEEB program are given, on the recommendation of the respective department, advanced placement and credit in all fields. Some students who make only passing scores on CEEB advanced placement tests are exempted from elementary courses. An effort is made to give recognition to every student who enters the University with credit on the CEEB advanced placement program.

The University also grants exemption and credit on the basis of the CEEB achievement scores in foreign languages, mathematics, biology, physics, chemistry, English, American and European history.

Students who took the CEEB Achievement Tests and/or participated in the special Advanced Placement Program of the CEEB and plan to enroll at Georgia should request the CEEB testing center to submit their scores and test booklets to the Director of Admissions, The University of Georgia, Athens, Georgia 30602.

The Honors Program

The primary goals of the Honors Program are to provide the superior undergraduate student with individualized intellectual opportunities designed to maximize the student's learning potential: smaller, enriched classes; direct and personal contact with top faculty members; greater curriculum flexibility; and the ability to strike out on his own in intellectual pursuits. Although most Honors courses and other instructional services are offered in the College of Arts and Sciences and in the College of Business Administration, the Honors Program is open to all students in the University who qualify for Honors admission.

The following colleges and schools have designated coordinators of Honors work, who may be contacted for additional information concerning the Honors Program in their respective disciplines: Arts & Sciences, Agriculture, Business Administration, Education, Environmental Design, Forest Resources, Home Economics, Journalism, Pharmacy, and Veterinary Medicine.

ACADEMIC HONORS

Graduation With Honors

The University awards degrees with Honors to candidates who meet specified standards of academic excellence. In order to be considered for a degree with Honors, a student must meet the following requirements:

1. Graduating seniors whose first matriculation at the University of Georgia occurred prior to September 1975 will be recommended for graduation with honors on the basis of the grade-point average and scholastic standards in effect at the time they first matriculated as listed in the 1973–75 and 1975–77 University Bulletin.
   a. Minimum of 90 quarter hours in residence after reaching junior classification.
   b. Based on all credit attempted in the quarter in which hours attempted equal a minimum of 90.
   c. All hours attempted in the final quarter before graduation included.
   d. Respective standards as follows:

Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

In order to qualify for honors graduation, a student must have taken a minimum of 75 quarter hours in which a letter grade (A, B, C, D, or F) was assigned.

2. Graduating seniors whose first matriculation at the University of Georgia occurred between September 1975 and Summer 1977 will be recommended for graduation with honors on the basis of their cumulative grade-point average for all four years of college work. For native students in the University of Georgia, this will mean simply that the total grade-point average will be used in establishing eligibility for graduation with honors. For transfer students, the grade-point average for the ninety hours or more of work completed at the University of Georgia will be averaged in with their official transfer average on all college courses attempted. Respective standards will be as follows:

Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

3. Graduating seniors whose first matriculation at the University of Georgia occurs in September 1977 or thereafter will be recommended for graduation with honors on the basis of their cumulative grade-point average for all four years of college work. For native students in the University of Georgia, this will mean simply that the total grade-point average will be used in establishing eligibility for graduation with honors. For transfer students, the grade-point average for the ninety hours or more of work taken at Georgia will be averaged in with their official transfer average on all college courses attempted. Respective standards will be as follows:

Summa cum laude	3.90
Magna cum laude	3.70
Cum laude	3.50

To qualify for honors graduation, a student must have earned a minimum of 90 quarter hours in residence. Honors eligibility regulations apply to all baccalaureate degree candidates.

First Honor Graduate

Beginning with the August, 1977, graduating class, no person will be designated as valedictorian. Each student graduating with a cumulative grade point average of 4.0 will be designated a First Honor Graduate.

Dean's List

The University encourages excellence in scholarship and gives official recognition to students whose work is superior by publishing deans' lists from each school or college at the end of each quarter. Deans' lists include all students who have, during the preceding quarter, made an average of 3.60 or higher, carried a load of at least 12 hours, and received no grades less than B and no incomplete (I) grades.

Honor Fraternities and Societies

Several honor fraternities and societies at the University extend recognition to students on the basis of scholarship and good character. There are chapters of Phi Beta Kappa, Sigma Xi, Phi Kappa Phi, and of many college, school, and departmental honor societies.

Honors Day

Honors Day was introduced to give public recognition to students who achieve high scholastic records. Students who are in the first five per cent of their classes, based on cumulative grade point averages, are included in the Honors Day program.

ACADEMIC RECORDS

The University of Georgia guarantees any student, regardless of age, who is or has been in attendance at the University the right of access to inspect and review any and all official records, files, documents, and other materials created during the period of enrollment which relate directly to him/her, subject only to certain specific exceptions. With other limited exceptions, no personally identifiable information from the education records of a student will be disclosed to any third party by any official or employee of the University without the written consent of the student.

Each student is guaranteed an opportunity to challenge the accuracy of information contained in any file or record to which he/she may have access, including the right to a hearing if so requested. Each student also has the right to file a complaint directly with the Department of Health, Education, and Welfare whenever the student believes that the rights afforded him/her by the University policy or the Family Educational Rights and Privacy Act have been violated.

Copies of the complete University Policy

Statement on Student Education Records may be obtained at the Registrar's office, the Office of Judicial Programs and the Office of the Vice President for Academic Affairs.

STUDENT SERVICES

HOUSING

For residence halls and general information:
Department of University Housing (542–1421)
Russell Hall, The University of Georgia
Athens, Georgia 30602

For on-campus family housing:
Student Family Housing Office (542–1473)
The University of Georgia
710 East Campus Road
Athens, Georgia 30602

For off-campus housing:
Off-Campus Housing Office (542–1421)
Russell Hall
The University of Georgia
Athens, Georgia 30602

Residence Halls

General Information

Approximately 5,800 students are housed in 16 residence halls, two of which are specifically designated for graduate students, geographically and administratively divided into three residential areas on the University of Georgia campus. These residential communities are designed for comfortable living, optimal convenience, and a positive contribution to the educational experience of the residents. Each residence hall features a modern, comfortable environment in which all residents can benefit and take pride. A variety of physical facilities are offered which house various living options. Within each residential area, attractive lounges, study and meeting areas, TV rooms, coin-operated laundromats, recreational facilities, and mail facilities are provided. Rooms are furnished with single beds, chests of drawers, desks, chairs, and private telephones. Bath facilities are centrally located and shared by students on each floor. The combination of physical facilities, staff, and student interest contributes to the stimulating environment of University housing.

Through the residence hall living units, students have an opportunity to participate in social, educational, and recreational programs and activities designed to further their personal, scholastic, and social development.

University Residency Requirement

All students whose academic classification by the Registrar upon initial matriculation is freshman, except those who are: (1) married; (2) veterans of more than 100 consecutive days of active military duty; (3) who live at home with their parents or guardians; (4) who have lived in housing (either at the University or at another institution) for three quarters, are required to live in a University residence hall. Students must be classified by the Registrar as a sophomore or above to be eligible to live in a fraternity or sorority house. Petitions requesting clearance to live off campus must be submitted no later than 30 days in advance of the quarter to be enrolled to the Department of University Housing.

Housing Contract and Application

Applications for residence halls are mailed to freshmen with their official notices of acceptance and to new upper class students on request. The application and housing deposit must be returned to the Housing Office in accordance with the accompanying instructions.

The residence hall contract is for the academic year. All students are urged to be familiar with the terms and conditions of the contract prior to signing. Although binding for the Fall, Winter, and Spring Quarters, provisions are made for mid-year terminations required by academic course programs such as student teaching, internships, and co-ops.

To reserve housing accommodations, applicants must submit an application and $50 deto the University Housing Department. This deposit, which serves as a combination room reservation/damage/clearance deposit, will be refunded after official check-out if the housing contract and all financial obligations are fulfilled.

Students who decide not to enroll at the University after making application for housing may cancel their application and will be refunded a portion of the deposit according to the terms of the application and/or contract.

Housing Assignment

Residence hall assignments are made based on the date the completed housing application and deposit are received in the University Housing

Office. Students will receive their academic year contracts and notifications of hall assignments approximately one month prior to the quarter for which application has been made. A signed residence hall contract, accompanied by a check for the rent for the first quarter, should be forwarded to the University Housing Office by the date specified on the contract.

Every effort is made to honor hall, roommate, and program differentiate preferences as space permits. Roommate preference will be honored if: (1) both applicants request each other in writing and indicate on their applications a higher priority for roommate than hall preference; (2) both initial applications are received by the Housing Office in the same envelope; and (3) a double room vacancy exists. Students who do not state a preference for a specific person as a roommate will be assigned a roommate without regard to race, color, creed, religion, or national origin. At the time of check-in to their assigned residence halls, students will be notified of their specific room assignments.

Rental Rates

The regular quarterly room rent does not include housing rates for housing between quarter breaks. The University reserves the right to charge extra rent when housing is provided during such times and to make changes in fees and other charges at the beginning of any quarter without previous notice.

Opening and Closing of Residence Halls

University residence halls open at 10:00 a.m. on the day prior to the first day of registration and close at 10:00 a.m. on the day after the last officially scheduled examination. Non-graduating residents may remain in the halls at the end of the quarter for 12 hours after their last scheduled examination or until 10:00 a.m. on the day after the last officially scheduled examination as per official University calendar, whichever is earlier. Room accommodations will be provided graduating seniors until immediately following graduation exercises. During official holidays within a quarter and between quarter breaks, the University reserves the right to close certain halls and require students electing to remain on campus to move temporarily to another hall.

Responsibility for Property

Resident students are held responsible for any damages to their rooms and furnishings. Damages will be assessed by the University and the student billed for repairs or replacements. Students should inform University officials of any damages which exist at the time they occupy their rooms.

Although precaution is taken to maintain adequate security, the University cannot assume responsibility for loss or damage to student possessions. Students or their parents are encouraged to carry appropriate insurance to cover such losses

Family Housing

Application may be obtained from the manager of family housing. Married students, as well as widows, widowers, divorcees, and single students with children are eligible for assignment to family housing. Students may apply for housing before they are admitted to the University, but assignment will not be made until they have been notified of their official acceptance.

Assignment

Assignments are made from a waiting list established according to the date applications are received with a $25.00 security deposit by the manager of family housing.

Deposits and Refunds

A security deposit of $25.00 is required with the application. The full $25.00 will be refunded if the applicant cancels his application before an assignment is offered, or at the end of his occupancy less any necessary deductions. The University reserves the right to use all or any part of the deposit to defray cost of cleaning the unit, repair of damages or replacement of equipment, or payment of any unpaid family housing bills.

Off-Campus Housing

The Off-Campus Housing office, located in the Central Housing Office, Russell Hall, provides a listing referral service to students and property owners.

Rental property is listed for landlords who agree not to discriminate against prospective tenants on the basis of race, color, creed, sex, or national origin.

Listings are updated monthly and may be picked up at the Housing Office. Due to the frequent changes in the listing, lists are not mailed to inquirers.

The Office does not make rental reservations or negotiate directly with householders in behalf of prospective tenants.

FOOD SERVICE

The University operates three food service facilities on campus for general student use. Students may eat at Snelling or Bolton cafeterias by purchasing a meal plan or by paying cash. The Bulldog Room is operated on a cash basis only.

The present rates for the meal plans are:

	Contractual Academic Year Price	*Payable in Quarterly Amounts*
15 meals per week, Monday through Friday	$621.00	$207.00
20 meals per week, Monday through Sunday	$738.00	$246.00

Additional information may be obtained by contacting the Food Service business office in Snelling Hall (542–1257).

STUDENT COUNSELING

The University attempts to maintain a close personal association between student and faculty. Each teacher and academic dean has the responsibility of guiding students in problems of an academic nature. Other counseling is provided by the Counseling and Testing Center, the University Health Service Mental Health Division and other Student Affairs personnel. The service of the Psychology Clinic and the Speech and Hearing Clinic offer specialized services coordinated with the Office of Student Affairs.

COUNSELING AND TESTING CENTER

The Counseling and Testing Center offers the student an opportunity to investigate and define educational-vocational objectives. Professional counselors assist students in obtaining a better understanding of interests, abilities, aptitudes, and personalities in relation to academic majors. Various tests may be used as an aid in clarifying and defining one's career goals. The interpretation and discussion of test results by the counselor assist the student in making wiser decisions. The career library has a large selection of occupational briefs, audio-slide presentations, and taped interviews on University majors to help the student in the decision-making process. In addition to scoring and administering tests used as an aid in counseling, the Testing Division of the Center also administers national testing programs. The Counseling and Testing Center is located in 217 Academic Building. The telephone number is 542–3183.

UNIVERSITY HEALTH SERVICE

The University Health Service, accredited by the Joint Commission on Accreditation of Hospitals, offers health care to registered students who have paid the student health fee. The divisions of Mental Health and Physical Health, enable the University Health Services to meet the varied needs of college students.

Included in the student health fee is partial support for services provided by the Health Service pharmacy, laboratory and x-ray facilities. These areas of the Health Service aid in the swift and accurate diagnosis and treatment of illnesses. Additionally, the health fee guarantees hospitalization in the Health Service up to seven consecutive days or 20 cumulative days during a school year.

The Health Service is open 24 hours daily, when school is in session, with professional nurse coverage. Physicians are in the building during clinic hours (9 a.m.–5 p.m., weekdays; 9 a.m.–12 noon, Saturday). Students are asked to schedule appointments with physicians during clinic hours. Emergencies will be seen at any time, and physicians are on call after clinic hours through the nurse on duty.

Made available by the University on a 12 month basis is a voluntary student accident and sickness insurance policy. It has been tailored to meet the needs of students and their dependents at a minimum cost. Applications are available at the Health Service and at the Coliseum during registration.

Prior to matriculation, students are required to send to the Health Service the Report of Medical History which is sent with the acceptance notification. This, and all communication between the University Health Service staff and the student-patient, is confidential. Information contained in the health record is considered privileged and will not be released without the written consent of the patient or a court order.

STUDENT FINANCIAL AID

Scholarships, Grants, Loans and Employment

Many capable students do not take advantage of educational opportunities because they lack adquate funds to meet increasing expenses. To help alleviate this problem, the University of Georgia has developed a student financial aid program designed to assist needy, qualified students through their college careers, including graduate and professional training.

Scholarships, grants-in-aid, loans and part-time employment are used singly or in combination to assist students, according to the degree of financial need, courses of study, and career plans. Various packages are suggested to each student, so he can choose the plan best suited to his circumstances.

The office coordinates the University's scholarship program, including the University Freshman Scholarship Program and the University Foundation National Merit Program. In addition, there are some gift scholarships available, with most being limited to Georgia residents. General financial aid applications are sufficient for University-sponsored scholarships. Interested students should contact their departments for additional information on other scholarships and refer to Appendix B of this bulletin.

General Applications Procedures

(1) Apply for admission to the University of Georgia.

(2) Request a general financial aid application from the University Office of Student Financial Aid. This completed document must be on file according to the following schedule:

To receive aid for:	*Applications file by:*
Fall quarter	March 15
Winter quarter	November 15
Spring quarter	February 1

NOTE: Aid is not normally available for students entering the University summer quarter. Students attending *only* during the summer are not eligible for University-administered aid programs.

(3) File a copy of the Financial Aid Form with the College Scholarship Service, and indicate that a copy of the form and its analysis should be sent to the University of Georgia. The Financial Aid Form may be obtained from high school guidance offices, or the University financial aid office

Since processing of the Financial Aid Form normally requires four to five weeks, applicants must mail the form to the College Scholarhip Service at least five weeks prior to the deadline date of the quarter for which aid is being requested.

Applications not complete by the above dates will be acted upon as time and funds permit.

Veterans' Aid

Veterans eligible for the G.I. Bill and dependents of deceased veterans eligible for the War Orphans Program will be assisted by the Office of Veterans Affairs, 224 Academic Building, in maintaining proper liaison with the Veterans Administration for educational benefits.

Veterans initially applying for G.I. educational benefits must bring their DD214, a copy of their marriage certificate and birth certificates of any children, if applicable, to the Office of Veterans Affairs where they will complete an application. In order to assure prompt payment of initial educational benefits, the above application should be completed and returned 45 days prior to the beginning of the quarter in which the veteran or veteran's dependent intends to enroll.

At the beginning of each quarter, student veterans or veteran's dependents must report to the Office of Veterans Affairs in order to maintain their registration for G.I. educational benefits. A student veteran or dependent receiving compensation who withdraws from the University or reduces an academic course load is required by the Veterans Administration to report such action promptly to the Office of Veterans Affairs.

Veterans and other eligible persons entitled to G.I. educational benefits may receive such benefits for a total of 45 equivalent credit hours in special studies. Only 15 hours may be attempted in each of the basic skills. The need for participation in the Special Studies Program must be established by testing, counseling, and the recommendation of a faculty member.

CAREER PLANNING AND PLACEMENT

The Career Planning and Placement Office is designed to help all students plan for their future careers. The office provides information about specific jobs, general areas of employment, all types of employers, as well as opportunities for continuing education in graduate and professional schools. Staff advisers are available to counsel students as they begin to think about and plan careers and help them determine the best way to achieve their career objectives.

Co-operative programs (work a quarter/go to school a quarter) and intern programs are available in several fields, as well as opportunities for summer and vacation work. Students are assisted in securing part-time work in Athens and on the campus, with emphasis placed on openings in career-related fields. Student spouses are aided in finding full-time work in the commuting area while husbands/wives are attending the University.

As a student reaches his senior or last graduate year, opportunities are made for him to interview prospective employers on or off campus. A "credentials" file is maintained for each student who requests this service, which includes reproducing and distributing his file and notifying him of vacancies which occur in his area of ability and interest.

INTERNATIONAL SERVICES AND PROGRAMS

The Office of International Services and Programs provides counseling and administrative services for students and faculty who are not citizens of the United States. In addition, the office provides information and counseling for American students who are planning to study, work or travel abroad. The office also plans and coordinates special programs and activities that will facilitate international understanding and cultural exchange at the University, such as the weekly International Coffee Hour, forums, and quarterly excursions.

Some of the services provided are: an orientation handbook; an ongoing orientation program; a bi-monthly newsletter; counseling on study abroad, immigration matters, finances, housing and personal problems. Other responsibilities include coordination of the Exchange Visitor Program, the Host Family Program, International Day at the Capitol, International Week, the Campus Friend Program and the Speakers Bureau. The office also acts as a referral agent to various University and community services when necessary.

STUDENT ACTIVITIES

The Department of Student Activities is a programming and service department and offers a wide variety of both to students and student organizations. It maintains files on all registered student organizations and offers programming and financial advisement to club officers. Personnel of the department advise Student Government Association, University Union, Minority Program Committee, fraternities, sororities, and Communiversity, a coordinating agency for student community service projects. The department is responsible for the printing and distribuion of the student faculty directory, the producion of student identification cards, and the quarerly calendar of events.

Recreational facilities and activities available hrough the department in Memorial Hall include table tennis, billiards, student lounges, ballroom, meeting rooms, club offices, pop concerts, varied film programs, lectures, debates, panel discussions, and special presentations. In addition, Legion Pool is open during the warm months.

Through University Union programs, efforts are made to present the finest talent available from the vocal, dance, orchestral, theatrical and lecture fields.

ART, DRAMA AND MUSIC ACTIVITIES

Art activities include exhibitions by students and faculty of the Department of Art as well as occasional traveling exhibitions, slide lectures and informal critiques by visiting artists and various student field trips. A 10-week summer session in Cortona, Italy is jointly operated by the Department of Art and the School of Environmental Design.

All students are eligible to participate in the quarterly major productions of the University Theatre of the drama department. Outstanding professional companies also appear on the campus.

The Department of Music presents weekly programs featuring faculty members, advanced students and guest artists. Other music activities include the Men's Glee Club, Women's Glee Club, University Chorus, Symphony Orchestra, and the University Band.

ATHLETIC PROGRAMS

The University encourages students' interests in sports through a program of intercollegiate athletics and intramural sports.

Intercollegiate program for students includes football, basketball, baseball, track, tennis, golf, swimming, cross-country, gymnastics, wrestling, and rifle marksmanship. Intramural sports include touch football, basketball, softball, golf, weightlifting, cross-country, track, badminton, swimming, horseshoes, table tennis, volleyball, bowling, shuffleboard and archery.

FORENSIC ACTIVITIES

Two debating societies offer the stimulation of intersociety debates and orations—Demosthenian Literary Society and Phi Kappa Literary Society. The University also sponsors University-wide debating teams, open to men and women students, which engage other outstanding college teams. The sponsoring academic area for the debate teams is the Department of Speech Communications, through the Georgia Debate Union.

RELIGIOUS ORGANIZATIONS

Students may participate in the religious programs of Athens churches and in student organizations sponsored by all major faiths, denominations, and inter- or non-denominational organizations. Many of these maintain student religious centers.

SOCIAL FRATERNITIES AND SORORITIES

A wide program of social functions is provided by men's Greek letter fraternities, women's Greek letter sororities, and other social clubs and societies.

Fraternities

Acacia
Alpha Epsilon Pi
Alpha Gamma Rho
Alpha Phi Alpha
Alpha Tau Omega
Chi Phi
Chi Psi
Delta Chi
Delta Tau Delta
Kappa Alpha
Kappa Alpha Psi
Kappa Sigma
Lambda Chi Alpha
Omega Psi Phi
Phi Beta Sigma
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Phi Kappa Theta
Pi Kappa Alpha
Pi Kappa Phi
Sigma Alpha Epsilon
Sigma Chi
Sigma Nu
Sigma Phi Epsilon
Sigma Pi
Tau Epsilon Phi
Tau Kappa Epsilon
Theta Chi
Zeta Beta Tau

Sororities

Alpha Chi Omega
Alpha Delta Pi
Alpha Gamma Delta
Alpha Kappa Alpha
Alpha Omicron Pi
Chi Omega
Delta Delta Delta
Delta Gamma
Delta Phi Epsilon
Delta Sigma Theta
Kappa Alpha Theta
Kappa Delta
Kappa Kappa Gamma
Phi Mu
Pi Beta Phi
Sigma Delta Tau
Sigma Kappa
Zeta Phi Beta
Zeta Tau Alpha

STUDENT COMMUNICATIONS

Student communications include three campus-wide media: *The Red & Black* (the student newspaper published five days a week), the *Pandora* (the yearbook), and WUOG-FM (the University radio station). The area of mass communications is directly supervised by the board of student communications, appointed by the president.

STUDENT ACTIVITY GROUPS

A great number of professional and honorary fraternities and sororities, interest clubs, honor clubs and student government groups exist on the University campus. A detailed listing is available in the Department of Student Activities.

REGULATIONS

The University maintains a code of regulations, which is printed in the student handbook, covering individual conduct and student organization activities. A separate handbook outlines traffic and parking regulations. All student are expected to know and observe these rules and regulations. To adjudicate alleged violations of these regulations, a student judiciary, also described in the student handbook, was established in 1969.

SPECIAL SERVICES AND FACILITIES

Special services and facilities of The University of Georgia include community education services, various institutes, the Georgia Center for Continuing Education, the University Press, Athletic Association and Alumni Society.

SERVICES AND INSTITUTES

The Vice President for Services is responsible for the direction and coordination of all public service programs of the University. Requests for information on programs in this section may be directed to him, unless otherwise noted.

Institute of Community and Area Development

This institute makes the total resources of the University available to state, area and local organizations confronted by problems of community and area growth, adjustment and development. Specialists from a large number of fields work together as problem-solving teams. Their activities include research and special studies; provision of factual information; help in community program planning; assistance in conducting leadership seminars, forums and other educational meetings.

Personnel involved are primarily University faculty, staff, and graduate students. These activities frequently involve contractual arrangements between the University and the local organization.

Institute of Government

The Institute of Government functions to achieve better government for the people of Georgia through a program of research, training and services.

A comprehensive research program is conducted in government, public administration, public law, the political process, public finance, police science and law enforcement, probation, parole and corrections. Research assistance on specific topics is offered to the Georgia General Assembly. The Institute publishes appropriate books and monographs, including handbooks for local and state governmental officials. Educational programs are held for governmental officials, including law enforcement personnel and probation, parole, and prison officials.

On a selected basis, the Institute of Government provides consultation services to area planning commissions, city and county governments. Institute of Government personnel serve jointly with many other components of the University.

Research assistantships in the Institute of Government are awarded to graduate students each year.

Institute of Higher Education

The Institute of Higher Education has been organized to work with other educational agencies and organizations in the development of higher education. The institute provides a diversity of services to two-year and four-year colleges in the state and surrounding region, cooperates with other institutions in statewide and regional studies, and participates in numerous planning, development, assessment and evaluation projects.

THE GEORGIA CENTER FOR CONTINUING EDUCATION

The Georgia Center for Continuing Education seeks to fill the need for continuing education for Georgia citizens regardless of their previous contact with institutions of higher education. One of the major functions of the University is to offer credit and non-credit programs on campus and throughout the state. The Georgia Center for Continuing Education is the administrative unit through which most of the non-agricultural service programs are directed. It draws on the full resources of the University, working closely with the faculty and participating groups to evaluate its various programs and design new services.

The Georgia Center building on campus provides, in addition to administrative offices for the program, living quarters for approximately 300 adults, other conference facilities for up to 500, as well as studios and work rooms for the University's educational television, WGTV, Channel 8.

Conferences and Institutes

The colleges and schools of the University arrange conferences, seminars, and institutes for adults who wish to continue their education by keeping informed about developments in their respective fields of interest. These continuing education activities are usually co-sponsored by professional, business, industrial, governmental or social organizations.

Inquiries should be made to the Georgia Center for Continuing Education, The University of Georgia, Athens, Georgia 30602.

University Centers and Extension Classes

As an extension of its regular credit program, the University offers extension classes wherever as many as 20 students desire a particular course. At some locations, such as Thomasville where a University Center is operated, courses are offered on a regular scheduled basis each quarter. Regular college credit courses taught by approved instructors are offered at these off-campus locations, as well as special non-credit programs tailored to the needs of the people of the area.

Entrance requirements and course content are identical with the standards that apply on the campus. The faculty is approved by the department concerned and by the Vice President for Academic Affairs. Students satisfactorily completing these classes receive credit on transcripts issued by the University registrar.

Fees for all continuing education credit programs are based on a rate of $15 per quarter hour. A registration fee of $1 per academic quarter is charged all students enrolling at off-campus locations.

Special certificate courses have been authorized in general business and in accouting. Students may elect the courses in these two sequences for two-year terminal programs, omitting some of the normal requirements of the freshman and sophomore years in the usual baccalaureate program.

In Athens, both credit and non-credit courses are scheduled quarterly. The credit program is conducted under University academic regulations; the non-credit program—The University Community Program—meets in the center building, offering informal discussion of timely subjects. Quarterly bulletins on all these programs are available on request.

Independent Study

The center also conducts an extensive program of services to individual students, including undergraduate college correspondence courses, supervised high school study, and directed *Reading You'll Like*. Adults who are interested in continuing their education through formal and informal study, educational travel, and the like, may consult the Adult Advisory Service in the Independent Study office for planning and referral.

Special Services

Many special programs such as community development education, civil defense and emergency preparedness education, and the drama loan library are also directed by the Georgia Center.

Communications Services

The communications services division has five distinct functions: educational broadcasting; motion picture production; University film library; photography; and audio-visual support for Georgia Center programs.

The University of Georgia's educational television station, WGTV, provides selective programming as a continuing education for its viewers. There are more than two and a half million potential viewers, placing WGTV among the top three university stations in the nation. Many of the station's productions are telecast regionally, and several each year are telecast nationally.

Many educational and instructional films as well as television film segments are produced each year, covering a wide range of subjects.

The film library, the photography department, and audio-visual operations department combine to render services in support of instruction in conferences and extension programs of the Georgia Center for Continuing Education. These units also produce materials for and render services to people and institutions throughout the entire state.

Through the combined efforts of its various departments, the communications services division has created a unique stage production known as the docudrama, often serving to keynote conferences.

Georgia Community Continuing Education Service

The University of Georgia has been designated as the state agency for the planning and administration of Title I of the Higher Education Act of 1965—Community Service and Continuing Education, the approved state plan through which all eligible higher education institutions in Georgia, both public and private, can qualify for federal financial assistance in the development and offering of adult educational programs, directed toward the solution of community problems.

OTHER UNIVERSITY ACTIVITIES

Instructional Resources Center

Assisting faculty members to utilize new technology more effectively in improving instruction is one of the major responsibilities of the Instructional Resources Center (IRC). The IRC provides a University-wide service to members of the instructional staff. Services include instructional television; preparation and duplication of audio tapes and cassettes; overhead projections and slides; instructional motion picture films; operation of a film, television tape, audio cassette, and slide library for on-campus use; an audio-visual equipment pool to provide projectors and other units of equipment for classroom instructional use; and consultative services related to the most effective utilization of new technology in instruction.

Faculty on Gerontology

The University of Georgia has designated a Faculty of Gerontology that is charged with the responsibility of developing a program of instruction, service and research in the processes of aging, biological and behavioral sciences and application of knowledge to practice. The faculty is comprised of approximately 50 members in 12 major units of the university and of 10 ex-officio members. The focus of the work is primarily at the graduate level, but there are opportunities for undergraduate students to take courses and practice relating to gerontology. Interested students should make contact with their respective department heads, the Chairman of the Faculty of Gerontology, or with the Office of the Vice President for Academic Affairs.

The University of Georgia Press

The University of Georgia Press publishes books that contribute to a better understanding of human affairs. It publishes the results of specialized research and scholarship together with scholarly books which interpret and preserve the history and culture of the state and region. The press provides a publication outlet for scholars throughout the nation.

For further information, or a list of publications by the press, contact the director of The University of Georgia Press, Athens, Georgia 30602.

The Georgia Museum of Art

The Georgia Museum of Art was established in 1945 when Alfred H. Holbrook donated his collection of American painting to The University of Georgia. Since that time, the collection of nearly 3,000 objects, including the Eva Underhill Holbrook Memorial Collection of American Art, has become an important cultural and educational resource for the University.

The permanent collection at the museum provides resources for students at the University and for a much wider audience through the loan of works to other museums and universities in the region and nation. No other university art museum exists in Georgia and few are established in the region. The Georgia Museum of Art is outstanding among those which exist in the nation.

More than a dozen temporary exhibitions are brought to the University each year and approximately 1,000 objects are lent to this program. Lectures and special events often complement the exhibitions.

The museum has created new interest in art among people, many of whom had no opportunity to visit galleries and museums that exhibit art of outstanding quality. Students from kindergartens, elementary schools, and high schools throughout the state visit the museum and, for many, these visits are the initial contact with visual art of acknowledged quality.

Athletic Association

The University of Georgia conducts a complete program of intercollegiate athletics. The University is a member of the Southeastern Conference, the National Collegiate Athletic Association, and the Association of Intercollegiate Athletics for Women, and abides strictly by the regulations and policies of these groups. Although the University faculty has general control of internal policies of the University relating to all phases of intercollegiate athletics, the University of Georgia Athletic Association has been created to facilitate the handling of the business and financial side of the intercollegiate program. The funds of the Athletic Association are subject to the control of the Board of Regents.

Alumni Society

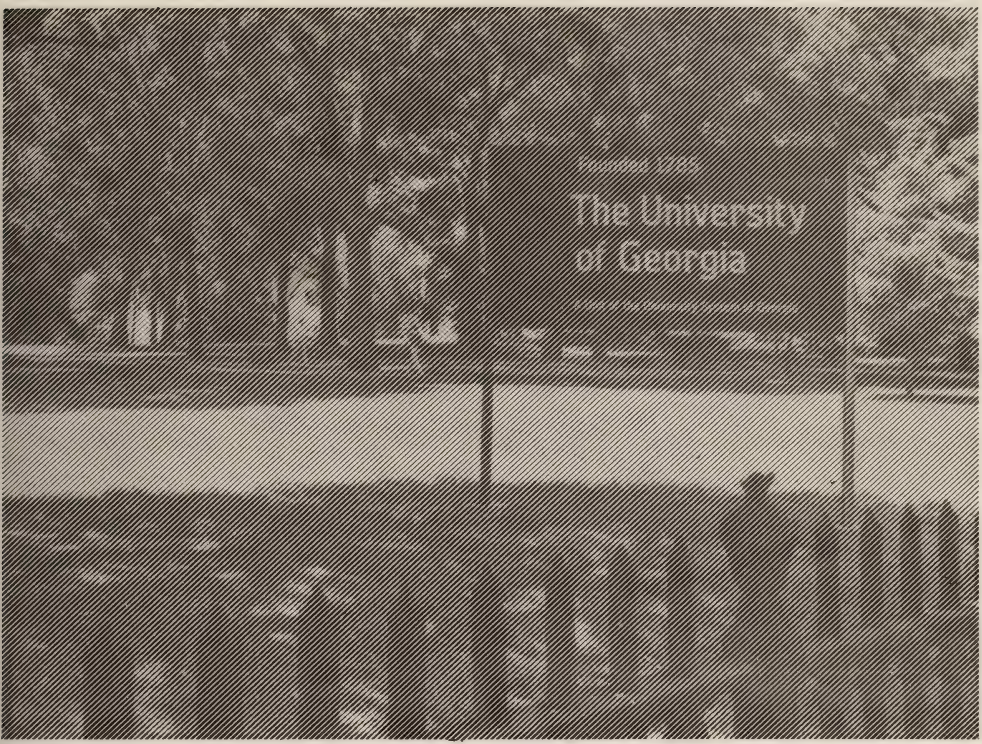
The University of Georgia Alumni Society maintains an active program for alumni, and it works closely with student groups on programs. All persons who at any time were matriculated as regular students in the University at Athens are eligible for membership. Alumni who contribute to annual giving may vote on society business, are eligible for election to office, and receive the magazine *Alumni Record*. Non-alumni parents and friends are welcomed as associate members. Students are invited to visit the Alumni House on South Campus. Loan funds and scholarships of the Alumni Society are listed in financial aid brochures.

The University of Georgia Foundation

The University of Georgia Foundation was organized in 1937 under the sponsorship of the Alumni Society and its officers. The Foundation is a corporation under the laws of the state of Georgia and has a board of trustees, consisting of alumni.

The purposes of the foundation are to develop the facilities of the University, to strengthen its financial resources by encouraging gifts to the University, and to receive, hold, and administer such gifts in accordance with the instructions of the donors.

Information regarding the Foundation may be obtained by writing to the vice president for development, The University of Georgia, Athens, Georgia 30602.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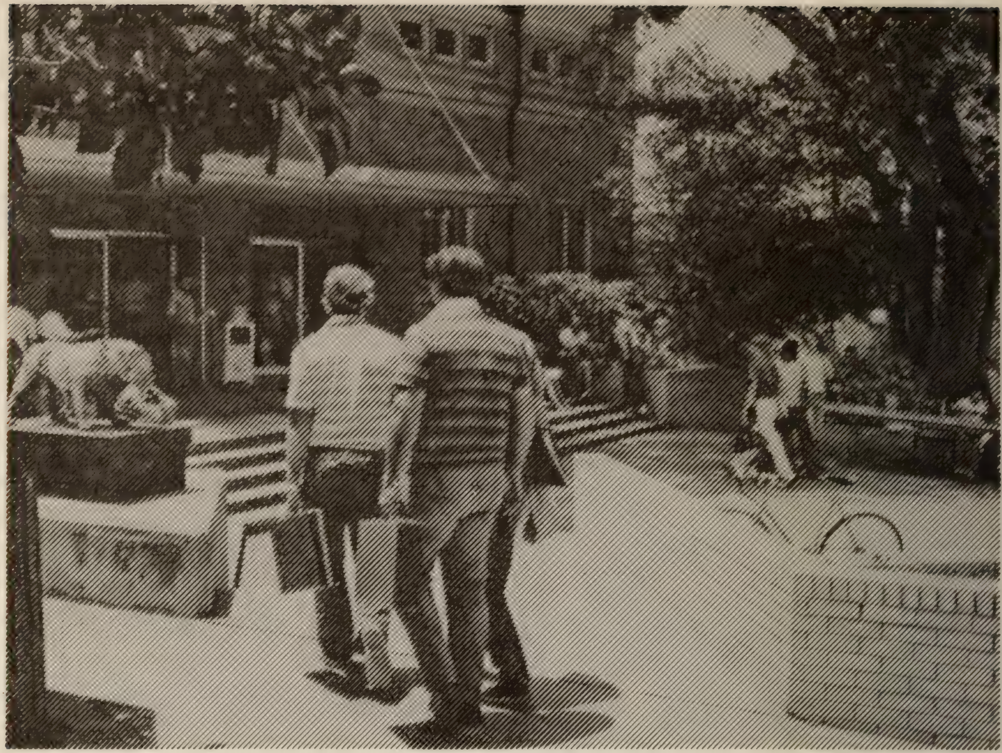

THE COLLEGE OF AGRICULTURE

ADMINISTRATIVE OFFICERS

Henry Wilburn Garren, A.B., B.S., M.S., Ph.D., *Dean and Coordinator of Agriculture*
Charles Porter Ellington, B.S., M.S., Ph.D., *Director of the Cooperative Extension Service*
William Perry Flatt, B.S., Ph.D., *Director of the Agricultural Experiment Stations*
Robert Stevenson Wheeler, B.S., Ph.D., *Director of Resident Instruction*
Richard Kenneth Noles, B.S.A., M.S.A., Ph.D., *Associate Director of Resident Instruction*
Thomas Lanier Frazier, B.S.A., M.S., *Assistant Director of Resident Instruction*

GENERAL INFORMATION

Purpose and Organization

The College of Agriculture might be called the College of Life Sciences since it is concerned with the study of basic principles of biology, chemistry, mathematics, physics, economics, and engineering. Life scientists are concerned with the application of basic principles in solving problems of land use, nutrition and food science, genetics, engineering, the control of plant and animal diseases and pests, the economics of production and marketing and many other problems.

The dean and coordinator is responsible for the administration of resident instruction, the Agricultural Experiment Stations and the Cooperative Extension Service. There are ten divisions or departments within the College of Agriculture responsible for their respective instruction, research or extension functions. These units include: agricultural economics, agricultural engineering, agronomy, animal science, dairy science, entomology, food science, horticulture, plant pathology and plant genetics; and poultry science. A program of study in environmental health science is available in the college. In addition, the College of Agriculture is associated with other schools and colleges of the University in certain related fields. Among these fields are botany, biology, biochemistry, chemistry, education, entomology, journalism, landscape operations, microbiology, sociology and veterinary medicine.

Facilities

The college is housed in several buildings on South Campus with administrative offices in Conner Hall. Research facilities include a number of farms, large and small animal laboratories, greenhouses and growth chambers at the experiment stations at Athens, Griffin and Tifton as well as other facilities at five branch stations, two field stations and four cooperating stations. These stations conduct a comprehensive program of basic and applied research in all phases of agriculture, encompassing production, processing, marketing, consumer relations and agri-business. Research in forestry, home economics and veterinary medicine are also part of the experiment station program. The primary purpose of the work of the stations is to provide an ever-increasing body of knowledge and information to the resident teaching and extension functions of the College of Agriculture.

The College Experiment Station at Athens is directly associated with the resident teaching program of the College of Agriculture. Many of the research scientists at this station teach at both the undergraduate and graduate levels. The experiment station laboratories and field plots supplement the regular teaching facilities. In connection with the research program, part-time employment and a number of graduate assistantships are available to students majoring in the College of Agriculture.

The major function of the Cooperative Extension Service is to aid in diffusing among the people of the state useful and practical information on subjects relating to agriculture, forestry, veterinary medicine and home economics and to encourage the application of this information. It provides informal education which helps people solve the problems encountered in home economics, youth development, agriculture, agricultural business, resource development and other related subjects. The extension service program is carried out in cooperation with the counties of the state by specialists from the University, county agents and county extension home economists. Many short courses of a practical and intensive nature are offered by the Cooperative Extension Service. Announcements of these courses are made throughout the year.

Degrees Offered

The College of Agriculture offers degrees in the agricultural and biological sciences, agricultural engineering, and environmental health science. Students registered in the college may receive the Bachelor of Science degree in Agriculture, the Bachelor of Science degree in Environmental Health or the Bachelor of Science degree in Agricultural Engineering.

Graduate Study

The College of Agriculture offers graduate programs leading to the M.S. degree in agricultural economics, agricultural engineering, animal science, agronomy, botany, dairy science, entomology, food science, horticulture, plant pathology and plant genetics, and poultry science. Additional degrees offered are the Master of Agricultural Extension and the Master of Plant Protection and Pest Management.

The Ph.D. degree is offered in agricultural economics, agronomy, botany, entomology, food science and dairy manufactures, plant pathology, plant genetics and poultry science. In addition there are interdisciplinary programs in animal nutrition, animal sciences (physiology, nutrition and genetics) and plant sciences.

Honors Program

The College of Agriculture participates in the programs for superior students including the Honors Program. Admission of beginning freshmen is by invitation. Students who are not invited as entering freshmen and who, after attending the University for a quarter or more, have a cumulative average of 3.5 or better, may request admission to the program. Students transferring from other universities or colleges with a cumulative average of 3.3, should write directly to the director of the Honors Program and request an interview. Students interested in this program should consult the section "Programs for Superior Students."

Advanced Placement

Advanced placement examinations are given to freshmen during orientation sessions. In addition, students who enter with good records on the advanced placement program of the College Entrance Examination Board (CEEB) may be given credit or exemptions for the courses which they have had on this program. Freshmen can exempt elementary courses in biology, chemistry, English, foreign languages, history, mathematics, political science and psychology. Students are encouraged to exempt the elementary courses.

Transfer Students

Students transferring from other units of the University System will be given full credit for all courses completed with satisfactory grades. Students should consult the programs of study section of the College of Agriculture to determine freshman-sophomore course requirements for each major. Any portion of the core curriculum which has not been completed during the freshman and sophomore years will be completed during the junior and senior years.

Academic Advisers

Each undergraduate student in the College of Agriculture is assigned an adviser according to his expressed academic interest. The student should consult with his adviser on all phases of his academic program. Student advisers are assigned by the department head and each student should contact his department head immediately upon arrival on campus. Unclassified and pre-veterinary students should report to Room 101, Conner Hall.

Programs with students sponsored by the Agency for International Development and similar programs will report to the director of resident instruction for assignment of advisors. Administration requirements of these students will be coordinated in the office of the director of instruction and administrative charges not to exceed $100 per quarter will be assessed.

BACHELOR OF SCIENCE IN AGRICULTURAL DEGREE REQUIREMENTS

Following is an explanation of majors offered by the departments of the College of Agriculture and related departments. The requirements outlined within each program are suggestive rather than definite. The major for each student is an individual program, arranged in consultation with staff members in the department in which the major is taken. The following programs include the courses which the majority of students will use to satisfy requirements for the specified major. A minimum of 195 hours is required for the B.S.A. degree.

General Core Curriculum

The core curriculum for the freshman and sophomore years provides general education in basic science courses as well as introductory courses in agricultural science. This allows a flexible choice of agricultural and non-agricultural electives. By the time he has completed the core curriculum, the student should have selected his major field of study.

For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*, page 24. Courses under Areas I, II, and III are generally standardized throughout the College. For specific Area IV requirements, consult the departmental listings which follow.

		HOURS
AREA I HUMANITIES		20
English 101, 102	10	
Speech 108 or 109	5	
Select one course from Art 111H (211), 113H (213), 287, 288; Classics 120, 121; Comparative Literature 121, 122; Drama 107, 222, 240; English 105H, 125H, 126H, 131, 132, 203, 204; Music 122, 223, 224, 259H; Philosophy 104, 115H (215), 258; Religion 115, 225H; Speech 108, 109, 110, 209, 218H, 250, 256; or a foreign language numbered 101, 102, 103, 104, 201, 202	5	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Chemistry 111, 112, or 121, 122	10	
Mathematics: One course from Mathematics 100, 101, 105, 116, 235, 253, or 254	5	
Physics: One course from Physics 101, 127, 128, 137, 138, 229 or 239	5	
AREA III SOCIAL SCIENCES		20
Political Science 101	5	
History 251 or 252	5	
Select two courses from Anthropology 102, 112H (212); Agricultural Economics 210; Economics 105, 106, 115H, 116H, 133, 134, 143H (133); Geography 101, 102, 104, 120, 121, 215H; History 111, 112, 215H, 216H, 251, 252, 280H; Philosophy 104, 115H (215), 258; Political Science 101, 105H, 202, 203, 212H; Psychology 101, 103H, 200, 258; Social Science 104H, 202H, 203H or Sociology 105, 106H, 260, 293	10	
AREA IV COURSES RELATED TO MAJOR		30
Biological Science	5	
Courses as outlined by departments	25	

Agricultural Economics (AEC)

Division Chairman and Head: Brannen.

The Department of Agricultural Economics provides training for young men and women interested in employment opportunities in contemporary agriculture and allied areas. Principal objectives of this program are:

(1) To prepare students for entering private business in positions that require fundamental training in agricultural business and marketing, resource development, farm management, credit and finance, and similar areas associated with agriculture. Emerging problems associated with human and natural resource adjustments, food and fiber distribution and the commercialization of agriculture emphasize the need for such training. Comparable training is also provided for students interested in employment positions with federal and state departments of agriculture.

(2) To prepare students for graduate work in agricultural economics. Research programs in agricultural economics in the land-grant colleges, by private business and the public sector offer additional opportunities for agricultural economists with advanced training.

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101 or Botany 121 or Botany 223H	5	
Statistics 200	5	
Mathematics 116 or 235 or 253	5	

Accounting 110	5
To complete requirements, elect from Biology 102; Botany 122, 100 or 200 level; agronomy or forest resources courses or from courses listed in Area III	6–10

Junior and Senior Years

(1) A minimum of 15 hours in the College of Agriculture other than agricultural economics.

(2) The following division core requirements:
  - AEC 300 Economics of Agriculture: Theory of the Firm
  - AEC 302 Economics of Agriculture: Aggregate Analysis
  - AEC 340 Agricultural Policy
  - AEC 458 Intermediate Economic Principles or ECN 405 Intermediate Micro-Economic Theory

(3) Special requirements:
  - AEC 304 Agricultural Marketing or AEC 403 Marketing Livestock and Livestock Products
  - AEC 301 Farm Organization and Management or AEC 421 Agricultural Adjustments and Resource Development
  - AEC 364 Land Economics or AEC 460 Economics of Rural Environmental Quality or AEC 480 Water Resource Economics

(4) Selection of a concentration with a minimum of 20 hours from the list of approved courses.

Concentrations in Agricultural Economics

Agricultural Business and Marketing

This concentration is designed to train people for jobs in agricultural business management and agricultural marketing.

AEC 304 Agricultural Marketing, or AEC 403 Marketing Livestock and Livestock Products, or MKT 360 Principles of Marketing
AEC 393 Public Regulatory Institutions in Food and Agriculture
AEC 400 Cooperative Business Organizations
AEC 408 Agricultural Labor Utilization or MAN 351 Principles of Management
AEC 467 Agricultural Prices
AEC 469 Agricultural Business Finance, or FIN 330 Business Finance
AEC 487 Commodity Marketing
ACC 111 Principles of Accounting II
ACC 370 Business Law
MKT 465 Marketing Research and Analysis

Farm Management and Finance

This concentration is designed to train people to manage their own farm, to operate as professional farm managers, or to serve as farm credit specialists in banks or other lending agencies

AEC 301 Farm Organization and Management
AEC 351 Farm Credit and Finance
AEC 402 Advanced Farm Organization and Management
AEC 421 Agricultural Adjustments and Resource Development
AEC 451 Farm Appraisal
AEC 467 Agricultural Prices
AEC 469 Agricultural Business Finance
FIN 326 Money and Banking
RE 390 Real Estate Principles
ACC 370 Business Law

Natural Resource Economics

This concentration prepares students for positions in natural resource management, planning, and development with public and private organizations

AEC 364 Land Economics
AEC 393 Public Regulatory Institutions in Food and Agriculture
AEC 421 Agricultural Adjustments and Resource Development
AEC 451 Farm Appraisal
AEC 460 Economics of Rural Environmental Quality
AEC 480 Water Resource Economics
ECN 402 Economics of Natural and Environmental Resources
FIN 434 Public Finance
RE 390 Real Estate Principles
GGY 358 Economic Geography
BIO 350 Ecology

Community Rural Development

This concentration prepares students for positions in general planning and development of rural communities or areas with public and private organizations.

AEC 364 Land Economics
AEC 393 Public Regulatory Institutions in Food and Agriculture
AEC 400 Cooperative Business Organizations
AEC 471 Resource Analysis of Agricultural Businesses
ECN 386 Labor Economics
ECN 410 Economic Growth and Development
ECN 495 Economics of Population and Human Resources
SOC 409 Social Change

- SOC 431 Rural Social Systems
- SOC 433 Population Theory and Problems
- SOC 435 The Community
- SOC 502 Community Development
- FIN 435 State and Local Public Finance
- RE 390 Urban Land Principles
- RE 512 Urban and Regional Development

Quantitative Methods

This concentration prepares students for work in private and public organizations requiring familiarity with computer methods and data processing and analysis

- AEC 461 Quantitative Techniques in Agricultural Economics
- AEC 467 Agricultural Prices
- AEC 502 Management in Agriculture
- MAT 235 Finite Mathematics
- MAT 253 Analytic Geometry and Calculus
- MAT 254 Calculus
- STA 421 Statistical Methods I
- STA 422 Statistical Methods II
- STA 424 Sampling and Survey Methods
- STA 500 Programming for Electronic Digital Computers
- STA 503 Commercial Data Processing

General

This option is offered as an alternative for students who wish to build a broader program of study in agricultural economics or who wish to select a concentration not fulfilled by the other four options. Students selecting this concentration are required to take a minimum of 30 additional hours in agricultural economics.

Agricultural Education (EAG)

Head: O'Kelley.

Career Opportunities

The courses offered in this department prepare students to be teachers of vocational agriculture. Students majoring in this department develop a broad background in the agricultural sciences and upon the satisfactory completion of the program outlined below are qualified for certification by the State Department of Education as teachers of vocational agriculture. The program for training teachers of vocational agriculture is carried on in cooperation with the College of Education through its division of vocational education.

In addition to the opportunities for teaching vocational agriculture, graduates who have majored in this department are employed in many leadership positions in the fields of agriculture and education. Such positions capitalize on the technical and professional skills of these graduates for application in various selling, promotional, administrative, research and educational leadership projects.

Apprentice Teaching

During one quarter of the senior year, each student does apprentice teaching in a selected off-campus school for which 15 quarter hours of credit are given. This system of training enables the apprentice to deal first-hand with the many problems of a teacher of vocational agriculture in a normal situations under the careful supervisions of the local teacher of vocational agriculture as well as a member of the University staff.

Concentration in Agricultural Education

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102	10	
Agronomy 210	5	
Courses in agricultural science, agricultural engineering, or forest resources	15	

Junior and Senior Years

Professional Education Area:	
Educational Psychology 304 or 205	
Agricultural Education 335, 336, 349, 546, 547, 548	33
Basic Support Area:	
Agricultural Economics 300, 301 or 304	
Engineering Technology 303, 307	
Plant Pathology 353; Genetics 358	
Entomology 374	35
Teaching Area Specialization:	
Selected in any one department from following courses:	10
Animal Science 373 and 360 or 361	
Agricultural Economics 403, 408, 421 or 502	
Agronomy 321, 356	
Dairy Science 379, 390, 392; Horticulture 101, 310, 362, 368	
Poultry Science 371, 372, 375; Agricultural	
Engineering Technology 320, 328, 360, 365, 380; Forestry 394; 395	
Special Requirement: EAV 401	3
Free Electives	18

Agricultural Extension (AET)

Head: Lancaster.

Career Opportunities

The concentration offered by this department is designed for students who wish to prepare for Cooperative Extension Service careers. It is open to students pursuing the B.S.A. curriculum in the College of Agriculture and in the School of Home Economics.

Students who choose this concentration, both men and women, must complete all freshman and sophomore courses in their respective degree-course programs. Upon completion of these requirements, they are to prepare, in keeping with the requirements of their respective concentrations, a program for their junior and senior years, which must be approved by their major professor

Field Experience

Two or more of the courses included in the major, one of which shall be Agircultural Extension 313, will normally be taken during the junior year. This will make it possible to provide for one summer's field experience, under supervision, to be completed prior to registering for Agricultural Extension 314, which is a course that will normally be taken during the senior year. Field experience for a period of two or more months, under an approved county agent or some other Cooperative Extension Service worker is desirable in this concentration.

Concentration in Agricultural Extension

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Botany 121, 122	10	
Selected courses in the agricultural sciences	20	

Junior and Senior Years

Science Option

Major: Agricultural Extension 313, 314; Sociology 431 or 435 and Educational Psychology 304	20
Science Selections: Microbiology 350, Botany 380, Plant Pathology 353, Entomology 374, Statistics 200 or Agronomy 459, Chemistry 261	30
First Minor: Agronomy 321 or 334, Agronomy 458	10
Second Minor: May be in one department in the University	10
Special Requirements: Journalism 577, Agricultural Economics 401	10
Electives: To be selected with the objective of providing a well-rounded program for the individual. Must be approved by the major professor. May be chosen from the offerings of any department of the University	25

Administration Option

Major: Agricultural Extension 313, 314, Educational Psychology 304, Sociology 431 or 435	20
Agricultural Economics: 304, 408, 467	15
Business Administration: Accounting 110, Accounting 370 and additional 10 hours approved by faculty adviser	20
Science Selections: Microbiology 350, Entomology 374, Chemistry 261	5
Special Requirements: Statistics 200, Agricultural Economics 469 or Finance 330	10
Electives: To be selected with approval of faculty adviser	25

Agricultural Journalism

Faculty Adviser: Burgess

There is a demand for College of Agriculture graduates trained in the various media of communications. Arrangements have been made with the School of Journalism for students in the College of Agriculture to obtain a major in agricultural journalism.

Concentration in Agricultural Journalism

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102	10	
Journalism 101, 203, 204 and 260	20	

Junior and Senior Years

Major (1) College of Agriculture Forty hours in agricultural sciences numbered 200, or above, selected with the adviser to make a logical whole.	40
Major (2) Journalism Journalism 558 and 30 hours selected from the following:	

Journalism 280, 351, 352, 460, 461, 577, 590, 591 and 592.	35
Electives	24

Agronomy (AGY)

Head: Colville.

Agronomy consists of crop and soil sciences and, therefore, applies to all fields of agricultural endeavor and to the total environment of man. It includes the breeding, production, management, pest control, physiology, ecology, climatology and utilization of crops, along with the conservation, genesis, classification, mineralogy, microbiology, physics, fertility, and chemistry of soils.

Career Opportunities

Students majoring in agronomy are prepared for employment in farming, agri-business, experiment stations, U.S. Department of Agriculture, private research, college teaching, seed industry, environmental protection, conservation and other related fields. They are trained as specialists in plant breeding, farm management, turf management (golf greens, public grounds, etc.), weed control, seed technology, crop physiology and climatology, fertilizers, soil conservation, soil microbiology, soil physics, soil chemistry. land and recreational management, extension specialists in crops and soils and technical representatives for private companies.

Concentration in Agronomy

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Agronomy 201, 210	10	
Biology 101, 102 or Botany 121, 122	10	
To complete requirements, elect from Animal Science 101; Agricultural Engineering 210, 220, 260, 265, 280; Botany 203, 205; Chemistry 123, 240, 241, 261[1], 280; Dairy Science 103; Environmental Design (LAR) 225; Food Science 200; Geology 125; Geography 101, 102, 104, 120, 121, 122; Horticulture 101; Poultry Science 101; Mathematics 101[1], 116; Statistics 200; Zoology 225, 226; Physics 101 or 127	10	

Junior and Senior Years

Crop and Soil Management

This major is designed to provide specialized training in soil management and crop production with sufficient latitude in agronomy electives to prepare the student for careers in agricultural industries and business, commercial seed production, soil conservation, soil survey, land appraisal, agricultural extension and farm management.

	HOURS
Major: Selected junior and senior courses in agronomy	20
Science Selections: 25 hours to be selected from: Plant Pathology 353, 356, Microbiology 350, Genetics 358, Mathematics 116, Botany 205, 375, 380, Geology 125, Entomology 374	25
Special Requirements: These electives are to be chosen with the objective of obtaining information that will contribute most to the student's basic knowledge in agronomy. Selections must be approved by the adviser and must include a minimum of 10 hours in agronomy. At least two quarter hours of Agronomy 427 are required	35
Electives	20

Science Options

The science option qualifies students for further training leading to advanced degrees. This concentration is designed for students who wish to continue studies at the graduate level with specialization in one or more of the following areas: physiology, breeding, ecology, climatology or production and utilization of crops; turf management; classification, genesis, mineralogy, microbiology, physics, conservation, fertility or chemistry of soils

	HOURS
Major: Selected junior and senior courses in agronomy	20
Science Selections: 25 hours to be selected from: Plant Pathology 353, 356, Microbiology 350, Genetics 358, Mathematics 253, 254, 255, Botany 205, 323, 358, 375, 380, 473, 476, Geology 125, 321, 323, Chemistry 223, 240, 241, 280, 340, 341, 342, Physics 128, 229,	

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[1] *If not taken as part of Area II, these courses must be taken as part of Area IV. Chemistry 240 or 340 may be used for 261.*

Biochemistry 310, 401, 402, Entomology 374	25
Special Requirements: These courses are to be chosen with the objective of obtaining information that will contribute most to the student's basic knowledge for effective work in agronomy. Courses must be approved by the major adviser. At least two quarter hours of Agronomy 427 are required	35
Electives	25

Conservation Option

The conservation option is designed to provide training in conservation and development of the soil and associated natural resources. It prepares students for careers in land use planning, area development and conservation of natural resources for a quality environment and also provides sufficient background for careers in government services, agricultural industries, and business.

	HOURS
Major: Selected junior and senior courses in agronomy	20
Science Selections: 25 hours to be selected from: Chemistry 123, Entomology 374, Genetics 358, Botany 205, 380, 375, Plant Pathology 353, 356	25
Special Requirements: These courses will be selected to give students broad training which will enable them to develop expertise relative to maintaining a quality environment. Courses must be approved by major adviser. At least two quarter hours of Agronomy 427 are required.35	
Electives	20

Turf Management

This major is designed to provide specialized training in plant science with emphasis upon turf grasses

	HOURS
Major: Agronomy 321, 369, 434, 459, 460, 466	25
Science Selections: Plant Pathology 353, 356, BOT 380, 473, 205, Genetics 358, Entomology 374	30
Special Requirements: Horticulture 101, 315 or 325, 362, 368 or 370, AGR 391, Plant Pathology (HOR) 430. At least two quarters of AGY 427 are required.	25
Electives:	20

Animal Science (AS)

Division Chairman and Head: Boyd.

The courses offered in animal science are designed to give students basic training in the production of beef cattle, swine and horses. While most of the courses offered deal with the more practical phases of selection, breeding, feeding and management, several courses of a technical nature are offered for those students who desire to enter some specialized type of work or who plan to follow a program of graduate study.

Career Opportunities

The courses are especially planned for students who expect to become livestock farmers, farm managers, herdsmen, animal science specialists, county agents, vocational agriculture teachers, college teachers or experiment station workers. They are also suitable for students who intend to pursue careers in agribusiness with breed associations, feed manufacturers, meat packing companies, livestock marketing, livestock equipment and supply companies, livestock journals or related fields

Concentration in Animal Science

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Chemistry 261 or 250	5	
Biology 101, 102 or Botany 121, 122 or Zoology 225, 226	10	
Agronomy 201, 210	10	
To complete requirements, elect from Animal Science 101, Accounting 110, 111, 116; Agricultural Engineering 210, 220, 228, 260, 265, 280; Chemistry 123, 280; Entomology 225; Mathematics 116; Physics 127, 128; Statistics 200	5	

Junior and Senior Years

A. Required Courses[1]		45
AS 310 Animal Breeding	5	
AS 320 Types, Classes, Grades and Evaluation of Livestock	3	
AS 330 Fundamentals of Animal Nutrition	5	
AS 331 Feeds and Feeding	5	
AS 360 Beef Cattle Production	5	
AS 361 Swine Production	5	
AS 381, 382 Animal Science Seminar	2	
AS 440 Physiology of Reproduction in Farm Animals	5	

GEN 358 Principles of Genetics	5
VPH 310 Elements of Physiology	5

B. Recommended Electives	55

A list of recommended electives is available in the department for each of the following Animal Science options:

- Beef Cattle Management
- Swine Management
- Agri-Business Management and Sales
- Science (General, Genetics, Nutrition or Physiology)
- Animal Science—Pre-Veterinary Medicine
- Double majors with other departments are available

TOTAL JUNIOR-SENIOR HOURS	*100*
MINIMUM HOURS FOR GRADUATION	*196*

Botany (BOT)

Faculty Adviser: Porter.

A major in Botany is available to students in the College of Agriculture who are interested in plant sciences. The curriculum emphasizes the biology of plants and aims at a broad understanding of plant structure, function, diversity and interactions. In our changing world an understanding of and solution to plant related problems will require a comprehensive knowledge of basic biological principles

Career Opportunities

Botany majors are well qualified to continue study in graduate school or pursue jobs as staff biologists with federal or state agencies; as research assistants or laboratory technicians for governmental organizations, educational institutions or commercial companies; as technical or sales representatives for commercial companies; or in secondary education.

Concentration in Botany

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Mathematics 254	5	
Physics 128	5	
Biology 101, 102 or Botany 121, 122	10	
Chemistry 240, 241	10	

Junior and Senior Years

Major: Biology 310, 320; 330 or 340; 350 or 360; Botany 428, 431, 483	25
Sciences Selections: From approved botany courses or related science departments	30
Minor: Must be in College of Agriculture	10
Electives	25

Biochemistry

Faculty Adviser: Wheeler.

This undergraduate major emphasizes both the physical and biological sciences as preparation for graduate study or for employment in business, industry or government. Included in the curriculum are both basic and applied courses in the chemistry of living organisms and vital processes of plants and animals

Concentration in Biochemistry

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Chemistry 111, 112 or 121, 122	10	
Chemistry 123, 280	10	
Physics 128, 229	10	

Junior and Senior Years

Major: Chemistry 240, 241, 490a; Biochemistry 310, 401, 451, 452	35
Special Requirements: This requirement is satisfied by selection of courses from the following list with the help of the adviser so as to best prepare the student for the type of work he plans to do following graduation. Mathmatics 253, 254, 255, Botany 380, 401, Dairy Science 491–493, Poultry Science 401, Genetics 358, Microbiology 350, Veterinary Physiology 310, Animal Science 358 and Agronomy 459	45
Electives	35

Biological Science

Faculty Adviser: Huston.

This major provides preparation for graduate or professional study as well as for employment in business, industry or government. Both basic and applied courses in the biological sciences are included in this curriculum.

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[1] *A 2.0 average in animal science courses will be required for graduation.*

Concentration in Biological Science

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102	10	
Physics 128	5	
Mathematics 253	5	
To complete requirements, elect from Mathematics 235, 254; Chemistry 240, 241, 280	10	

Junior and Senior Years

Major: Biology 310, 320, 330, 340, 350, 360, 370 (any four)	20
Minor I: Ten hours of senior division courses in Life Science	10
Minor II: Ten hours of senior division courses in any department in the university	10
Special Requirements: This requirements is met by selection of courses from the following list with help of the adviser. Chemistry 240, 241, Microbiology 350 and an additional 15 hours selected from the following or equivalents: Animal Science 358, Biology 321, Biology 330, Biology 331, Biology 351, Chemistry 123, Chemistry 280, Entomology 374, Entomology 376, Genetics 358, Poultry Science 380, Poultry Science 482, Zoology 356, Zoology 390	30
Electives	30

Chemistry (CHM)

Faculty: McCreery.

Instruction in this division is designed primarily to fit the needs of agricultural students. By means of lectures, recitations and laboratory work, students are taught the fundamental chemical principles underlying and controlling plant and animal life.

Career Opportunities

The curriculum for majors in chemistry is designed to prepare students for professional employment in experiment stations, in governmental and industrial chemical or biochemical laboratories and as chemical or biochemical staff members of colleges, universities, hospitals and allied chemical industries. This curriculum is highly recommended for students seeking professional status and for those who plan to do graduate study. For course descriptions, look under chemistry in the College of Arts and Sciences.

Concentration in Chemistry

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Chemistry 121, 122	10	
Physics 128	5	
Chemistry 123, 280	10	
To complete requirements, elect from Mathematics 253, 254, 255; Physics 229; Agronomy 210; German 101, 102	5	

Junior and Senior Years

Major: Chemistry 340, 341, 342, 426, 427, 442, 480, 490A,B,C, 580 and any two from Chemistry 347, 348, 359, 430, 431, 432	61–65
Electives in the College of Agriculture	15–19
Free Electives	20

NOTE:

(a) A scholastic average of 2.5 must be made for the freshman and sophomore years in order to continue this curriculum. An average of 2.5 must be maintained for the entire four years.

(b) This curriculum meets the prescribed standards of the American Chemical Society for the training of chemists. Area IV cannot be satisfied in the freshman-sophomore years and must be completed during the junior-senior years if one is to meet these standards. Courses in Area IV will substitute for electives during the junior-senior years. All students who satisfactorily complete this curriculum are automatically certified by the department of chemistry to the American Chemical Society.

Dairy Science (DS)

Division Chairman and Head: Boyd.

The dairy industry in Georgia is an important segment of the agricultural economy. There is much demand for trained personnel in the production and manufacturing phases of the thriving dairy industry. The modern industry requires personnel trained in business, economics and management as well as the traditional dairy science courses. A work-internship program is available to provide practical training for students.

Concentration in Dairy Science

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Botany 121, 122 or Zoology 225, 226	10	
Chemistry 240 or 261	5	
To complete requirements, elect from Animal Science 101; Dairy Science 102; Agricultural Economics 210; Accounting 110, 111, 116; Chemistry 241; Geology 125, 126; Geography 101, 102, 104; Poultry Science 101; Agronomy 201, 210; Mathematics 101; Statistics 200.	15	

Concentration in Dairy Production

Junior and Senior Years

Dairy production prepares students for careers in dairy farm operation as herdsman, manager or owner; in sales of equipment or feed; in field services with processing plants, feed manufacturers, breed associations and marketing agencies; in college research and teaching.

		HOURS
Required Courses:		40
DS 310 Dairy Cattle Breeding	5	
DS 330 Fundamentals of Animal Nutrition	5	
DS 362 Dairy Herd Management	5	
DS 363 Dairy Cattle Nutrition	5	
DS 381, 382 Dairy Seminar	2	
DS 442 Milk Secretion	3	
AS 331 Feeds and Feeding	5	
AS 440 Physiology of Reproduction in Farm Animals	5	
VPH 310 Elements of Physiology	5	
Recommended Electives		60

A list of recommended electives is available in the department for each of the following Dairy Science options:

Dairy Cattle Management
Agri-Business Management and Sales
Science (General, Genetics, Nutrition or Physiology)
Dairy Science—Pre-Veterinary Medicine
Double majors with other departments are available

TOTAL JUNIOR-SENIOR HOURS	100
MINIMUM HOURS FOR GRADUATION	196

Concentration in Dairy Manufacturing

Junior and Senior Years

Dairy manufacturing prepares students for careers in dairy plant operations such as production, supervision or management; sales of products, supplies and equipment; quality control; college teaching, research, extension or public relations

		HOURS
Required Courses:		33
DS 324 Dairy Products Judging and Grading	3	
DS 352 Dairy Chemistry	5	
DS 353 Market Milk and Related Products	5	
DS 354 Dairy Plant Management	5	
DS 355 Ice Cream Making	5	
DS 357 Dairy Microbiology	5	
MIB 350 Introductory Microbiology	5	

Electives for Major Concentration:	20
Accounting 110, 111, 216, 370	
Agricultural Economics 300, 304, 467, 469	
Chemistry 123	
Dairy Science 362	
Entomology 374	
Microbiology 411, 412	
General Electives, approved by adviser	25
Free Electives to meet BSA Degree Requirements	22
TOTAL JUNIOR-SENIOR HOURS	100
MINIMUM HOURS FOR GRADUATION	196

Entomology (ENT)

Head: Hunter

Students who specialize in entomology receive training in the identification of insects and the damage they cause, their structure, habits and control

Career Opportunities

It is generally recognized that knowledge of insect control is necessary for the successful growing of either plants or animals and should, therefore, be a part of the training of all agricultural scientists. In addition, many positions in teaching, research, control and extension entomology exist in colleges and universities, experiment stations, state departments of entomology, the United States Department of Agriculture, the United States Public Health Service and in various private concerns doing pest control or insecticide compounding or manufacturing. Study leading to advanced degrees and to higher teaching and research positions is also available. The entomology major provides an excellent pre-medical program.

Concentration in Entomology

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102	10	
To complete requirements, elect from Botany 121, 122, 203, 205; Zoology 225, 226; Agronomy 210; Geography 120	20	

Junior and Senior Years

Science Option

Major: Entomology 325, 460, either 401 or 415 or 450, either 374 or 376 or 382 or 384 and one additional course selected from the preceding courses or from: ENT 350, 440, 470, 474, 477, 480, 482 and 494	25
Science Selections From: Microbiology 350, Genetics 358 and three additional courses from the following: Botany 375, Botany 380, Geology 125, Geography 120, Plant Pathology 353, Statistics 200, Zoology 225	25
First Minor: To be approved by head of department	10
Second Minor: Must be in College of Agriculture	10
Special Requirements: Ten hours of a foreign language	10
Free Electives	20

Administrative Option

Major: Entomology 325, 460, either 401 or 415 or 450, either 374, 382 or 384 and one additional course selected from the preceding courses or from: ENT 350, 440, 474, 477, 480, 482, and 494	25
Agricultural Economics: 300, 304, 467	15
Business Administration: Accounting 107, 370 and an additional 12 hours in business administration approved by major professor	20
Science selections: Plant Pathology 353, Genetics, 358	10
Special Requirements: Statistics 200 or Economics 312, Agricultural Economics 469 or Finance 330	10
Electives	20

Food Science (FS)

Head: Smit.

The worth of the food processing industry is about a hundred billion dollars in the United States alone, a value that is approximately four times larger than the next largest manufacturing industtry. There is a constant demand for college graduates, both men and women, with training in food science. This demand is created by the high percentage of foods marketed in processed form rather than as fresh or raw products. Improvements and new developments are the lifeblood of the American competitive system. Consequently, the food and related industries, such as the packaging industry, employ many food technologists.

Curriculum

The food science department offers both undergraduate and graduate instruction designed to give basic and technical training in preparation for work in such industries as meat and poultry processing, canning, freezing, pickling, preserving and the preparation and preservation of specialty food products. Superior students are encouraged to undertake graduate study inasmuch as great opportunities are now open to food scientists with advanced degrees.

Career Opportunities

Opportunities open to graduates in the food or allied industries include research; development and production work; technical sales within the food industry or in closely related areas such as the container and equipment manufacturing fields; extension work; research work in experimental stations or in other branches of government; food consulting and promotional work with public or private utilities.

Concentration in Food Science

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Botany 121, 122 or Zoology 225, 226	10	
Chemistry 240 or 261	5	
To complete requirements, elect from Physics 127[1], 128; Mathematics 101; 253, 254, 255; Statistics 200; Chemistry 123, 280; Accounting 107	15	

Junior and Senior Years

Science Option[2]

Major: Food Science 367, 407, 409, 411, 414, 422 and 5 additional hours of food science courses	40
Special Requirements: Microbiology 350, Chemistry 241, Biochemistry 310, Physics 128	20
Electives	40

Processing-Technology Option

Major: Food Science 365, 367, 368 or 386 or 424, 407, 409, 411, 412, 414, 419, 422, 423	55
Special Requirements: Microbiology 350	5
Electives	40

General Agriculture (GAG)

Faculty Advisers: Frazier, Noles, Wheeler.

This program is designed for those students who want a general program in the agricultural sciences and who do not want to specialize in one of the animal, plant, food, economics or engineering sciences.

Career Opportunities

Opportunities are open to graduates in the production, marketing, processing and distribution of agricultural products and in many governmental agencies.

Concentrations in General Agriculture

Freshman and Sophomore Years

See general core curriculum as outlined for the Bachelor of Science in Agriculture degree, page 49.

Junior and Senior Years

Forty hours comprising a logical whole from courses in the agricultural sciences and/or agriculturally-related fields such as botany, entomology, forest resources, home economics, and veterinary medicine. Students may select from: Agricultural Economics 300, 301, 304; Agronomy 201, 210, 321, 356; Animal Science 373; Dairy Science 379; Horticulture 262; Food Science 367; Poultry Science 371	40
Thirty hours in disciplines related to and supporting the major. Students may select from: Accounting 110, 111, 370, 371; Agricultural Engineering 203, 207, 220, 260, 265, 280; Animal Science 358; Botany 375, 380; Chemistry 240, 261; Entomology 374; Genetics 358; Medical Microbiology 311; Microbiology 350; Statistics 200; Veterinary Anatomy 309; Veterinary Physiology 311	30
Electives	35

Horticulture (HOR)

Division Chairman and Head: Jones.

The programs in horticulture are designed to train students in the application of basic principles and theories of plant growth, handling, harvesting, storing of products and landscaping small properties.

Career Opportunities

Students who specialize in horticulure and who work closely with their adviser can achieve the academic requirements necessary to enter any one or more of the following fields: teaching in high schools or technical schools; horticulture journalism; management of production units, market units, parks, golf courses, arboretums, botanical gardens, garden centers; landscaping of homes; maintenance of parks, recreational areas and landscape plantings; production, post-harvest physiology; or environmental research; or salesmen with commercial companies. Students capable of obtaining advanced degrees have opportunities in teaching, research and extension at the university and junior college level.

Curriculum

The curriculum is designed with considerable flexibility so that the student can achieve a B.S.A. degree with emphasis on any area of horticulture. Through the judicious selection of electives, the student can broaden his background in business administration, management, education, journalism, or any of the physical or biological sciences.

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[1] If not taken as part of Area II, these courses must be taken as part of area IV.

[2] To meet the minimum requirements recommended by the Institute of Food Technologists for a major in food science, a student should follow the science option and add Chemistry 123, Mathematics 253, 254 and 255.

Concentration in Horticulture

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Botany 121, 122; Agronomy 210, Chemistry 261	10	
To complete requirements, elect from Agronomy 201; Chemistry 231, 240, 241, 280; Biochemistry 301; Botany 203; Accounting 107, 108; Engineering Technology 310, 325; Management 210; Mathematics 253	20	

Junior and Senior Years

Science Option

Major: HOR 315, 325, 362, and 421.	20
Special Science Requirements: Botany 323, or 431, 380, Entomology 374, Plant Pathology 353, Genetics 358	25
Free Electives:	20
Additional courses	35
Nursery Management Option	
Additional courses	35
Grounds Maintenance and Design Option	
Additional courses	35
Horticulture Therapy	
Additional courses	35
Fruit Production	
Additional courses	35
Vegetable Production	
Additional courses	35
Floriculture	
Additional courses	35

Microbiology

Faculty Adviser: Giddens.

Career Opportunities

Microbiology is recommended for students who wish to prepare themselves for graduate study or for employment in the fields of bacteriology, microbiology, mycology or nematology.

Concentration in Microbiology

This concentration is an interdisciplinary program utilizing microbiology courses from the Colleges of Agriculture, Arts and Sciences and Veterinary Medicine.

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum see page 49 and/or consult adviser.

AREA IV COURSES RELATED TO MAJOR	30
Biology 101, 102 or Botany 121, 122	10
Zoology 225	5
Chemistry 261 or 240	5
Courses approved by department	10

Junior and Senior Years

Major: Microbiology 350, 461, 389 or 411, 407 or 421	20
Science Selections: 25 hours selected upon approval from Genetics 358; Plant Pathology 353; Animal Nutrition 358; Botany 380 (or Veterinary Physiology 310); Biochemistry 301; Chemistry 240 or 241	25
Special Requirements: Classics 310; at least 15 hours from Microbiology 409, 410, 414, 422, 462, 470, 480	20
Electives	35
TOTAL	100

Plant Pathology (PAT)/Plant Genetics (GEN)

Division Chairman and Head: Garrett.

A student in the Department of Plant Pathology and Genetics may major in (1) plant pathology, (2) pest management and plant protection, or (3) genetics. The student majoring in plant pathology concentrates his study in both the science and art of plant pathology. This includes basic training in the study of plant diseases with choices of specialization in fungal, viral, bacterial and nematode diseases, or disease control. The pest management and plant protection program of study, offered jointly by the Departments of Plant Pathology, Entomology, Agronomy, and Horticulture, is designed to give the student multidisciplinary training essential for the recognition, management, and control of major plant pests, mainly disease organisms, insects, and weeds, with the minimum use of pesticides. Students concentrating in genetics receive a foundation in the basic science of genetics which leads to choices of advanced study in genetics or to specialization in plant or animal breeding in cooperation with various plant and animal science departments.

The programs of study in either plant pathology, pest management and plant protection, or genetics are broad enough to provide the training in the basic sciences that will enable graduates to take advantage of a variety of opportunities in agriculture and related industries and also to leave open the option of continued study for advanced degrees in graduate school. They are flexible enough to permit the student to explore a variety of special fields according to his or her interests. Following introductory courses, students may choose among advanced courses in genetics, plant breeding, nematology, bacteriology, mycology, virology, crops pathology, and disease diagnosis and control.

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum, see page 49 and/or consult adviser. Note: CHM 121, 122 required in Area II

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102 or Botany 121, 122 or Chemistry 111, 112 or 121, 122	10	
Chemistry 261	5	
To complete requirements, elect from Agronomy 201, 210; Chemistry 223, 280, 240, 241; Mathematics 116, 235, 253; Statistics 200	15	

Junior and Senior Years

Concentration in Plant Pathology

Major: Plant Pathology 353, 420; and two from Plant Pathology 423, 425, 428, 429, and Entomology 477	20
Science Requirements: Botany 380; Chemistry 240, 241; Genetics 358 and Microbiology 350	25
Science Selections: any three from Agricultural Economics 300; Biochemistry 301; Botany 323, 375; Chemistry 123; Genetics 401, 402; Entomology 374; Agronomy 434	15
Electives related to major	15
Unrestricted electives	20
TOTAL	100

Concentration in Pest Management

Major: AGY 434, ENT 374, ENT 477, PAT 353 and PAT 430	23
Science Requirements: AEC 300, AGY 201, AGY 210, BIO 350, BOT 380, GEN 358, GGY 120, HOR 430 and STA 200 or equivalent courses	42
Electives	35
TOTAL	100

Concentration in Genetics

Major: Genetics 358, 359, 401 and two from Genetics 402, 404; Biology 301; Animal Science 404; Poultry Science 405; Microbiology 480; Zoology 401	22
Science Requirements: Biochemistry 310; Chemistry 240, 241; Microbiology 350	20
Science Slections: any four from Biology 302; Botany 375, 380; Chemistry 123, 280; Mathematics 253; Statistics 200; Entomology 374; Plant Pathology 353	20
Electives: To be approved by faculty adviser	18
Electives: Free	20
TOTAL	100

Poultry Science (PS)

Division Chairman and Head: McCartney.

The courses in the poultry science department are designed to prepare the student for work in the poultry industry, its allied fields, and to pursue graduate study.

Career Opportunities

Students who major in this department receive training that will prepare them for work in the following fields:

1. Commercial poultry production
2. The feed industry; diet formulation, sales and service and quality control
3. The processing industry; plant operation and personnel management
4. Experiment station and extension specialist
5. The hatchery business; incubation and hatching egg production
6. Advance study leading to the M.S. and Ph.D. degrees in the fields of poultry nutrition, genetics, market products technology, disease and parasites; physiology and production economics.

Concentration in Poultry Science

Freshman and Sophomore Years

For Areas I, II, and III of the core curriculum see page 49 and/or consultant adviser.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101, 102	10	
Chemistry 261 or 240	5	
Mathematics 101, 103, 116, 204, 253	5	
Electives	10	

Junior and Senior Years

Science Option

Major: Poultry Science 360, 371, 375, 380, 379, and Avian Medicine 373.	26

Special Requirements: Elect 10 hours from Chemistry 123, 280, 241 or Biochemistry 310; elect 10 hours from Accounting 110 or 116, Agricultural Economics 300, or Statistics 221; and 34 hours of science courses of which 15 hours must be selected from Microbiology 350, Genetics 358, Animal Science 358 or other Poultry Science courses. Science courses can be selected with approval of the faculty adviser.	54
Electives	20
TOTAL	100

Administration Option

Major: Poultry Science 360, 371, 375, 380, 379 and Avian Medicine 373.	26
Special Requirements: Accounting 110 or 116; Agricultural Economics 300; Statistics 221 and 222 or Quantitative Methods 109 and 312; 15 hours must be selected from Microbiology 350, Genetics 358, Animal Science 358 or other Poultry Science courses; and 19 additional hours of approved administrative courses selected with the approval of the faculty adviser	54
Electives	20
TOTAL	100

Technology Option

Major: Poultry Science 360, 371, 380, 379 and Avian Medicine 373.	26
Special Requirements: Accounting 110 or 116; Agricultural Economics 300; and 34 hours of science courses of which 25 hours must be selected from Microbiology 350, Genetics 358, Animal Science 358 or other Poultry Science courses. Other science courses can be selected with the approval of the faculty adviser.	54
Electives	20
TOTAL	100

Pre-Veterinary Medicine

Faculty Advisers: Wheeler, Noles.
The following courses (or their equivalent) are required in satisfying the minimum pre-veterinary medical curriculum:

	HOURS
English (ENG 101 and 102)	10
Physics (PCS 127 and 128)	10
Biology (BIO, BOT or ZOO)	15
General Chemistry (CHM 121 and 122)	10
Organic Chemistry (CHM 240 and 241)	10
Humanities and Social Studies[1]	20
Electives[2]	15
TOTAL	90

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[1] *POL 101, HIS 251 or 252, speech and an additional five hours. Political science and history can be satisfied by exam and if satisfied by this means, one substitutes any other course in the humanities or social sciences*

[2] *Students who have a limited background with animals should consider the following electives: AS 101, AS 358, DS 103, PS 101 and GEN 358.*

Selection of students is the responsibility of a representative committee of the faculty of the College of Veterinary Medicine appointed by the dean of the College. The committee considers applications of candidates who have met the minimum academic requirements, including successful completion of two years of college study, or its equivalent, in an accredited college. The committee also considers other factors such as character, experience with animals, general knowledge, motivation, health and personality.

Upon satisfactory completion of the minimum requirements, a student may apply for admission to the College of Veterinary Medicine. Exceptional students may be admitted upon the completion of the minimal two-year program. Students with academic records of 2.7 or above should apply during the junior year for acceptance at the beginning of the senior year. Any student who is registered in the College of Agriculture may, upon completion of the pre-veterinary requirements, continue with the agricultural curriculum. Such students will be able to apply all credits earned to requirements for the B.S.A. degree.

Students who are admitted to the College of Veterinary Medicine and who have completed at least 45 hours of courses numbered 200 or above, including 20 or more hours in the College of Agriculture, in residence at The University of Georgia, may receive the degree after successful completion of the first year toward the D.V.M. degree. To qualify for the B.S.A. degree, other than the pre-veterinary medicine major, students must complete the requirements for a major in agriculture during the junior year in addition to the minimum pre-veterinary medicine program.

Rural Development/Rural Sociology

A concentration in these areas is available within the Bachelor of Science degree in agriculture. The concentration is offered in the Department of Agricultural Economics. (See "Concentration in Resource Economics and Rural Development.")

Employment opportunities for men and women with this major concentration are available in rural development centers, chambers of commerce, cooperative extension, economic development commissions, area planning commissions and other state and federal agencies.

A major in this concentration would prepare students for graduate work toward master's and doctoral degrees in rural and community development commissions, area planning commissions and other state and federal agencies.

A major in this concentration would prepare students for graduate work toward master's and doctoral degrees in rural and community development, extension education, agricultural economics, sociology, adult education or public administration.

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING DEGREE REQUIREMENTS

Division Chairman and Head: Brown.

Agricultural engineering is the branch of the engineering profession which relates and applies engineering principles, techniques and technology to the appropriate needs of agriculture and the countryside. The economical and efficient production of food and fiber, the processing of food and fiber, and the orderly and planned development of the countryside are principal focal points. The engineering technological services having to do with mechanical harvesting, waste management, field mechanization, agricultural industries and processes, soil and water engineering, and the quality and management of soil, water and air in the countryside are presented both in theory and in design courses so that the graduate is prepared to meet the needs and challenges of modern society.

Agricultural engineers have brought engineering to agriculture through the use of mobile mechanical power, electrical energy with its related controls and equipment, new structural designs, waste management practices, structural environments, and new policies and techniques in land and water use. In addition, there is the recent involvement with alternate energy sources for agriculture, such as solar energy, with protecting the quality of air, soil and water, with improved safety practices, lower construction costs, new materials, new regulations, and with predicting and controlling the environmental impact of new techniques and practices.

Agricultural Engineering Program

The courses comprising the four-year professional curriculum—Bachelor of Science in Agricultural Engineering—provide well balanced training in the basic sciences, engineering sciences, engineering design and analysis, the humanities and the interrelationship between engineering and social science. The curriculum is fully accredited by ECPD (Engineer's Council for Professional Development). The graduate receives academic preparation leading to the ability to plan and design appropriate engineering solutions.

The department also offers a program of graduate study leading to the master of science degree. The graduate program places emphasis upon advanced study in science and engineering and upon the methods and practices of engineering research.

Cooperative Plan

A cooperative plan is available to engineering students. The co-op student alternates work and academic quarters and is eligible to enter this plan after having completed a minimum of five academic quarters, one of which must have been on campus.

Career Opportunities

The need for trained engineers is critical. The number of graduates is about 35 percent short of the demand on a national basis. In general, BSAE graduates find employment about as follows: 65 percent are in industry with machinery companies, feed manufacturers, electric power suppliers, building material suppliers, etc.; 10 percent are in government service with the SCS, ARS, AMS activities of USDA; 5 percent are engaged in teaching, research, or extension at colleges and universities; 15 percent are self-employed either as consultants, contractors, or sales engineers; and 5 percent choose a career in some branch of the armed forces.

Curriculum in Agricultural Engineering

For Areas I, II, and III of the core curriculum, see requirements on page 49 under Bachelor of Science in Agriculture degree and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101 or Botany 121	5	
Physics 128	5	
Mathematics 253, 254, 255	15	
To complete requirements, elect from Agronomy 210; Agricultural Engineering 109; Engineering Technology 310	5	

Junior Year

FALL	
Statics, AEN 350	5
Digital Computers, AEN 342	3
Elec. Circuits, AEN 383	5
Dif. Eq., MAT 401	5

WINTER	
Dynamics, AEN 351	5
Thermodynamics, AEN 373	3
E.E. Mach. Lab., AEN 385	3
Str. of Mat., AEN 355, Str. of Mat. Lab,.AEN 355A	5

SPRING	
Fluid Mech., AEN 356	5
Heat Transfer, AEN 374	5
Electronics, AEN 387	5
Design Practices, AEN 360	2

Senior Year

FALL	
Energy Conversion, AEN 362	3
Soil & Water Engr., AEN 325	5
Struct. Design, AEN 371	5
Elect. System. & Controls, AEN 441 OR Instr. for Env. Qual., AEN 448	5

WINTER	
Processing, AEN 381	3
Mgt. of Plant Envir., AEN 361	5
Waste Mangmt., AEN 370	5
Water Mgt. Syst., AEN 444 OR Countryside Dev. Engr., AEN 445	5

SPRING	
Mgt. of Ani. Env., AEN 382	3
Engr. Ec, Spec, Contr, AEN 394	5
Agr. Science Elective	5
Mech. Harv. Systems, AEN 443 OR Planning of Ag. Ind., AEN 446	5

Agricultural Mechanization Technology Program

The agri-business mechanization program leads to the degree of Bachelor of Science in Agriculture with the aim of meeting the needs of agri-business. For individuals with mechanization training. The program stresses the application of established principles and techniques of engineering, agricultural science, and commerce to the broad industry of agriculture. The senior division studies are divided equally among mechanization technology, agricultural science and business science.

The graduates of the program are prepared to assume responsible positions in agri-business and to provide leadership in our society. Job opportunities exist in industry, public service and government as well as self-employment, including agricultural production.

Curriculum in Agricultural Mechanization Technology

For Areas I, II, and III of the core curriculum, see requirements on page 49 under Bachelor of Science in Agriculture degree and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Biology 101 or Botany 121 or Zoology 225	5	
To complete requirements, elect from Mathematics 101, 253; Physics 127, 128; Engineering Technology 310, 320, 360, 365, 380; Agricultural Mechanization Technology 300; Agronomy 201; Accounting 116	25	

Junior Year

FALL	
Bldgs. & Equip.	3
Applied Graphics	5
Prin. of Accounting	5
Prin. of Soils	5

WINTER	
Drainage, Irrigation and Erosion	3
Const. Materials & Tool Processes	5
Prin. of Management	5
Crop Science	5

SPRING	
Farm Electrification	3
Structures & Envir.	5
Business Finance	5
Agriculture Econ. or Agriculture	5

Senior Year

FALL	
Farm Power & Mach.	3
Legal Environment of Business	5
Hydraulics in Agr.	5
Econ. of Agriculture or Agriculture	5

WINTER	
Materials Handling & Processing	5
Prin. of Marketing	5
Util. of Elec. Power	5
Agriculture	3

SPRING	
Market Promotion	5
Production and Harvesting Technology	5
Agriculture	2
Agriculture	5

BACHELOR OF SCIENCE IN ENVIRONMENTAL HEALTH SCIENCE DEGREE REQUIREMENTS

Department Chairman and Head: Boyd.
Environmental health scientists are in demand by governmental agencies, private industries and institutions. Opportunities for employment exist in the various specialized programs within public health agencies in such areas as food and milk technology, solid waste management, vector control, general sanitation engineering and pollution control. Environmental scientists are employed in programs of water and air pollution control, quality control, industrial hygiene and a variety of other activities by a significant number of agencies and commercial concerns.

The need for environmental scientists in Georgia is increasing constantly and employment, promotional and professional opportunities for academically qualified personnel are increasing proportionately. The demand for trained environmental scientists, however, is not restricted to the state of Georgia. Due to the limited availability of college training programs for this field, numerous other states rely upon the resources of The University of Georgia for graduates in this subject matter area.

Program

The program outlined below is inter-departmental in nature and utilizes the available courses and special facilities of many departments. It should be emphasized that the first two years of the program can be completed at most junior colleges.

Curriculum

For Areas I, II, and III of the core curriculum, see requirements on page 49 under Bachelor of Science for Agriculture degree and/or consult department.

AREA IV COURSES RELATED TO MAJOR		30
Two course sequence: Biology 101, 102 or Botany 121, 122 or Zoology 225, 226,	10	
Physics 127	5	
Statistics 200	5	
Graphics (EIA 102 or AMT 300)	5	
Chemistry 261, 240, 241	5	

Junior and Senior Years

To complete requirements elect from:		70
Entomology 374, 376, 384	5	
Entomology 477 or Poultry Science 433	5	
Environmental Health Science 301, 302, 303, 366, 459	12	
Dairy Science 352, 357, 452	10	
Food Science 367, 407, 421, 425	13	
Microbiology 350	5	
Medical Microbiology 311, 422, 480	10	
Agricultural Engineering 310, 328	5	
Agronomy 210, 454, 464	5	
Free Electives to complete BSEH Degree Requirements		30
TOTAL JUNIOR-SENIOR HOURS		100
MINIMUM HOURS FOR GRADUATION		196

THE FRANKLIN COLLEGE OF ARTS AND SCIENCES

ADMINISTRATIVE OFFICERS

John C. Stephens, Jr., A.B., M.A., Ph.D., *Dean*
Charles L. Darby, B.A., Ph.D., *Associate Dean*
Charles William James, B.S., M.S., Ph.D., *Associate Dean*
Calvin D. Hasbrouck, Jr., B.M., M.M., *Assistant to the Dean*
Carlton Mell, Jr., B.B.A., *Assistant to the Dean*

Objectives

The objectives of the College are to advance and to disseminate knowledge in the basic academic disciplines of the Arts and Sciences. The College offers the undergraduate the fundamentals of a liberal education and the opportunity to concentrate in studies which form the foundation for professional pursuits. The College, in concert with the Graduate school, offers the graduate students opportunities for advanced study and research. The faculty of the College strives to enrich the intellect and to nurture the resourcefulness of the individual student so that he may deal effectively with life's challenges. The objectives of the College are pursued by a faculty committed to excellence in teaching and to the proposition that research and creative activities are integrally related to the quality and vitality of the educational program.

Academic Advisers

Each freshman and sophomore in the College of Arts and Sciences is assigned a faculty member who will be his academic adviser. The assignment is made according to the expressed academic interests of the student. The adviser assists the student in registration, and is available to counsel with the student about his study methods, progress, plans, and any other matters related to his academic program. Each student is scheduled for a conference with his adviser at least once each quarter. At the end of the sophomore year, the student is referred to the appropriate department for counseling concerning his senior division work.

Major

On or before registering for the junior year, the student should select the degree for which he is a candidate, the division of the College in which he will take his major work, and the subject in this division in which he expects to major.

The professor in charge of the student's major subject is known as the student's adviser or major professor. All courses constituting the student's major division program must be approved by this adviser. To be official all approvals must be in writing and filed in the Dean's Office.

Programs

The programs of the College of Arts and Sciences for the freshman and sophomore years, except for a few elective courses, are fairly uniform. In the junior and senior years, a concentration or major is offered in the following fields:

DIVISION OF BIOLOGICAL SCIENCES: The department of biochemistry, botany, entomology, microbiology, psychology, and zoology.

DIVISION OF FINE ARTS: The departments of art, drama and theatre, and music.

DIVISION OF LANGUAGE AND LITERATURE: The departments of classics, comparative literature, English, Germanic and Slavic languages, and Romance languages.

DIVISION OF SOCIAL SCIENCES: The department of anthropology, economics, geography, history, philosophy and religion, political science, sociology, and speech communication.

DIVISION OF PHYSICAL SCIENCES: The departments of chemistry, geology, mathematics, physics and astronomy, and statistics and computer science.

DIVISION OF INTERDISCIPLINARY STUDIES

Degrees Offered

The following degrees are offered by the College of Arts and Sciences:

BACHELOR OF ARTS, in which the major may be in any division of the College.

BACHELOR OF SCIENCE, in which the major must be in the Division of Biological or Physical Sciences.

BACHELOR OF SCIENCE IN CHEMISTRY, in which the major must be chemistry.

BACHELOR OF SCIENCE IN PHYSICS, in which the major must be physics.

BACHELOR OF FINE ARTS, in which the major must be in the Division of Fine Arts.

BACHELOR OF MUSIC, in which the major must be in music.

Majors are also offered in economics and psychology under the Division of Social Sciences.

Combined Degree Programs

The College of Arts and Sciences in collaboration with other schools and colleges offers the student of superior scholastic standing, programs leading to the Bachelor of Science degree consisting of a three year liberal arts program in the College of Arts and Sciences and a professional program in another school or college.

The following degree programs are offered:

BACHELOR OF SCIENCE, offered with the Medical College of Georgia.

BACHELOR OF SCIENCE, offered with the College of Veterinary Medicine at the University.

BACHELOR OF SCIENCE AND BACHELOR OF SCIENCE IN ENGINEERING, offered with the Georgia Institute of Technology.

Division of Interdisciplinary Studies

A student who has some unusual but definite academic interest for which no suitable major is offered by any department in the Franklin College of Arts and Sciences and who has completed at least 45 quarter hours of college-level work, or its equivalent, with a grade-point average of 2.5 or higher may, with the permission of the Chairman of the Interdisciplinary Degree Program, plan his or her own major.

The interdisciplinary major must consist of an approved and coherent pattern of courses in more than one department. The thrust of the entire interdisciplinary program is such that the emphasis is on early planning and design. Students whose programs reflect an attempt to "pull something together" near the end of the undergraduate program or to look back and attempt to create a theme to fit courses already completed are outside the spirit of the program.

Early selection by the student of a faculty adviser or of a faculty advisory committee is essential in the planning of the program of study. The major adviser or advisory committee must be approved by the Chairman of the Division. The preparation of the proposed program of study for the interdisciplinary major is a joint effort between the student and the faculty adviser or advisers, and there will be continued contact between the two parties. The completed proposal must be submitted to the Chairman of the Division of Interdisciplinary Studies for review and approval. Any subsequent changes in the original proposal must also be approved by the Chairman.

Proposals for an interdisciplinary degree major may be submitted to the Chairman of the Division by any student in the Franklin College of Arts and Sciences.

Afro-American Studies Program

Coordinator: Mary M. Hutton

The Afro-American Studies Program at The University of Georgia was established in the spring of 1969 to bring together students and faculty interested in studying the political, social, economic, intellectual, and aesthetic impact made by those of African descent on American society. Because it is increasingly apparent that a wider appreciation of the historical heritage of Africa is necessary for an understanding of the attitudes and aspirations of black Americans, The University of Georgia has created a single program embracing both "African Studies" and "Black American Studies." While the program is sufficiently broad in scope to allow students to concentrate in either area if they so desire, it encourages participants to become familiar with all aspects of black culture in both the African and non-African milieu. The program, which is open to students of all schools and colleges of the University, sponsors an interdisciplinary colloquium for students and faculty and cooperates with university departments in coordinating the scheduling of courses.

The Certificate in Afro-American Studies is awarded by the College of Arts and Sciences to participants who acquire 20 quarter hours credit in approved courses. The designed flexibility of the program is based on the recognition that career plans of undergraduate students are frequently indefinite. The Certificate in Afro-American Studies taken in conjunction with a traditional major allows the student to pursue advanced study in either an established discipline or in interdisciplinary Afro-American studies.

The College of Arts and Sciences permits its students who enroll in the program to satisfy a portion of the requirements for undergraduate majors by offering 2C or more hours in upper division courses with Afro-American content in lieu of the 20 or more hours required within the major division.

Further information and applications for admission to the certificate program may be obtained from the director.

French Studies Program

Coordinator: Jean-Pierre J. Piriou

The French Studies Program at the University of Georgia was established in the fall of 1976. By bringing together existing courses and faculty members from various departments, the program offers the student an opportunity to share in a current national interest in French Studies and, at the same time, to develop a humanistic understanding of French civilization through the study of the French language, history, art, government, geography, literature, and philosophy.

The French Studies Program is based on a departmental major leading to the Bachelor of Arts or Bachelor of Science degree. The curriculum in French Studies with a departmental major includes the prescribed number of credit hours for the baccalaureate degree as well as forty quarter hours of French content courses chosen from at least three fields. (Courses taken within the major may be counted in fulfillment of this requirement but no more than 20 hours in one discipline will be accepted). Interested students must apply and be admitted to the program before the end of the first quarter of their sophomore year. Students completing the requirements of this special program of study will receive the Certificate in French Studies upon graduation.

Applications for admission to the program and further information may be obtained from the Coordinator of the French Studies Program.

Latin American Studies Program

Coordinator: Manuel D. Ramirez

Because of the geographic and historical proximity of Georgia to Latin America, a number of professors at the University of Georgia long recognized the opportunities and responsibilities of the University to cultivate Inter-American understanding through education. This awareness became even more acute in recent years and has been reflected in the interest of the United States government in the internal political events of the countries of the other Americas. For some years professors at the University, especially in the fields of anthropology, art, economics, geography, geology, history, sociology, and Spanish American language and literature, have been engaged in the teaching of courses and in research activities concerningnLatin America. The Latin American Studies Program, therefore, was established at the University in the summer of 1974 primarily to coordinate and develop facilities at the University to provide interdisciplinary preparation for students who are planning careers that require specialized knowledge of the Latin American republics and the Inter-American sytem.

The Latin American Studies program is based on a departmental major leading to the Bachelor of Arts degree. With the cooperation of many departments, the Franklin College of Arts and Sciences enables the undergraduate student to plan a degree program encompassing a major field and a number of Latin American content courses. At present the major may be selected from the following fields: anthropology, art, geography, geology, history, political science, sociology, and Spanish. The curriculum in Latin American Studies with a departmental major includes the degree as well as forty quarter hours of Latin American content courses chosen from at least four fields. Courses taken within the major may be counted in fulfillment of this requirement. Students completing the requirements of this special program of study will receive the Certificate in Latin American Studies upon graduation.

Applications for admission to the program and further information may be obtained from the Director of the Latin American Studies Program.

Women's Studies Program

Coordinator: Maija Blaubergs

A Women's Studies Program at the University of Georgia was established in the spring of 1977. The program is designed to integrate the needs, interests and contributions of women into the already existing educational programs at the University.

The undergraduate certificate program is open to students working toward any major. A certificate requires 30 completed hours.

Further information and applications for admission to the certificate program may be obtained from the coordinator of the program in New College.

Medieval Studies Program

Coordinator: James W. Alexander
Students of the medieval period, whatever their area, have discovered that an interdisciplinary approach is necessary to achieve an expertise in, and an understanding of their field. The University of Georgia Medieval Studies Program, established in 1974, is intended as an aid and an official means whereby a student, undergraduate or graduate, can complete his degree in one of the established disciplines, along with a concentration in interdisciplinary medieval studies. In some cases this concentration will be termed a major, in others a minor; a good deal of flexibility seems necessary and desirable. In all cases, however, it should help foster an understanding of the medieval period.

A detailed list of medieval courses offered at the University may be had by request of the Director of the Medieval Studies Program. All departments offer independent study, either internally or through the Honors Program, and any undergraduate with the requisite grade point average may petition to write a senior thesis through the Honors Program. For the undergraduate who wishes to specialize in Medieval Studies, the Program offers 20 hours within a traditional department combined with another 20 in related areas. The individual student program is developed in consultation with a major professor and is then approved by the Steering Committee of the Medieval Studies Program. Upon completion of this program, the A.B. candidate is awarded the certificate in Medieval Studies as well as the diploma. The Medieval Studies Faculty urges Latin to fulfill the A.B. language requirement and in most cases requires a reading knowledge of medieval Latin for those proposing to pursue medieval studies in graduate school. Students pursuing graduate degree work within an established department and take their outside fields in the Medieval Studies Program. The University of Georgia Libraries hold an outstanding collection of source and secondary materials for the study of the Middle Ages and early Renaissance. The Medieval Studies Program sponsors colloquia wherein faculty and students may present the results of their research, discuss their intellectual problems, present guest lecturers and mount dramatic and musical productions of the medieval period.

Experimental Courses

The Franklin College of Arts and Sciences offers a small number of experimental courses which are primarily designed to take advantage of some unusual set of circumstances such as the presence on the campus of a visiting scholar or the TV series on the Bicentennial. These courses may be offered for no more than two years, hence are not listed in the *Bulletin*. They are publicized through announcements posted on campus and distributed by academic advisors.

Graduate Study

Students interested in graduate work are advised to consult with the head of the department in which the student is majoring. Complete information on graduate degrees and admission requirements is found in the Graduate School Bulletin.

Degree Requirements

All students must acquaint themselves with degree requirements in this section as well as those applicable to all schools and college of the University as published in the General Information section of this catalogue.

Candidacy for a Degree

After a student has earned 135 academic hours application must be made for graduation in the Registrar's Office. Failure to do this at the beginning of the senior year may result in postponement of the graduation date.

Elective Courses

Not more than 15 elective hours in professional schools may be credited toward degrees in the College of Arts and Sciences except in the programs with special provision for the teaching certificate.

BACHELOR OF ARTS DEGREE REQUIREMENTS

	HOURS
1. English Composition	10
2. Foreign Language	10–20
3. Literature	10
4. History	10
5. Social Science	18–20
6. Fine Arts, Philosophy, Religion	15
7. Science	20
8. Mathematics	15

9. Major	40
10. Electives	31–43
11. Physical Education	5
Total Required for Graduation	196

	HOURS REQUIRED
1. *English Composition*: (ENG 101 & ENG 102). A minimum grade of 2.0 in ENG 101 is prerequisite for ENG 102 and a miniumum average of 2.0 is required for ENG 101 & 102).	10
2. *Foreign Language*: 1st, 2nd, 3rd, 4th quarters of one foreign language. (If the first three quarters are exempted, 5 hours credit is awarded; if all four quarters are exempted, 10 hours credit is awarded and the foreign language is satisfied).	10–20
3. *Literature*: Courses from CML 121, 122, ENG 131, 132, Classical Culture 120, 121, French, German, Italian, Spanish 201, 202, Russian 401, 402, Spanish-American 205, 206, Greek, Latin 500.	10
4. *History*: Any courses in History numbered 111–399.	10
5. *Social Studies*: Courses from two or more of the following areas: Anthropology, Economics, Geography (not physical), Political Science, Psychology, Sociology, Speech Communication.	18–20
6. *Fine Arts, Philosophy, Religion*: Art 287, 288, Drama 300, Fine Arts 300 or (Art and/or Music 300), Philosophy (not logic 258 or 444), Religion.	15
7. *Science*: Biological Sciences sequence, Physical Sciences sequence or Physical Science 101 and Geography 104. (At most, one of these sequences may be a non-laboratory sequence)	20
8. *Mathematics*: Math 100 plus two from the following: Math 105, 106, (101 or 116), 235, 253, 254, Statistics 200, 500 *or* 221, 222, Philosophy 258.	15
9. *Major*: 40 hours approved by major department with minimum grade of 2.0 in each course. *Major Subject*: 20 hours in residence in one subject in courses numbered 300 or higher. *Major Subject or other subjects in the same Division of the College as the major*: 20 hours with at least 10 hours of these in courses numbered 300 or higher.	40
10. *Electives*: To provide a total of 196 hours.[2]	31–43
11. *Physical Education*: All Freshmen & Sophomores are required to complete six quarters of physical education with passing grades except as provided under *Objectives* in the Catalog.	5
Total	196

12. *Grades*: To complete requirements for graduation, a minimum average of 2.0 is required in all grades received and no more than one-fourth of the total hours earned may be in grades of 1.0. No student may graduate while on probation.
13. *Residence Requirement*: The minimum residence requirement for a baccalaureate degree is 90 quarter hours.
14. *Constitution Requirement*: All students are required to exempt or satisfactorily complete a course in American Government. Students who satisfy this requirement at an Institution outside the state of Georgia must also pass the examination on the Georgia Constitution. (For Examination Schedule, see *Timetable of Classes*).
15. *History Requirement*: All students are required to pass examinations on the history of the United States and Georgia, unless appropriate courses have been exempted or satisfactorily completed. (See *Objectives, General Catalog*) (For times when Examination is given, see *Timetable of Classes*)
16. *Rising Junior Examination*: For Examination Schedule, see *Timetable of Classes* or Testing & Evaluation Office, Academic Building.
17. *Senior Exit Examination*: For Examination Schedule, contact Testing & Evaluation Office, Academic Building.
18. *Academic Advisers*: Each student in the Franklin College of Arts and Sciences is urged to see his Academic Adviser at least once each quarter. For an appointment with an adviser, Freshmen & Sophomores should

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[1] *Credit is not allowed for both FA 300 and Art or Music 300.*

[2] *No more than 15 hours of electives may be taken in the major or in courses outside Arts and Sciences and no credit* for Basic ROTC may be counted among the 196 hours required.

go by the Dean's Office, New College. Juniors & Seniors should contact the Department in which they plan to major.

19. *Honors Courses*: Appropriate honors courses may substitute for corresponding courses in this curriculum.
20. *Advanced Placement*: Exemption of a course with credit is equivalent to having satisfactorily completed the course and may be so used in this curriculum. Course requirements may be satisfied by exemption without credit, in which case the number of electives must be increased to satisfy the 196 hour requirement.
21. *Waiver of Degree Requirements*: Course substitutions or waiver of requirements in this degree program may be made only upon written approval of the Dean or the Senate Committee on Academic Standards.
22. *Candidacy for a Degree*: After earning 135 hours, a student must apply for graduation in the Registrar's Office, Academic Building, and have his program certified by the Dean. Failure to do this at the beginning of the senior year may result in postponement of graduation date.

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

	HOURS
1. English Composition	10
2. Foreign Language	5–15
3. Literature	10
4. History	10
5. Social Science	10
6. Humanities/Social Science Electives	10
7. Mathematics	15
8. Science	30
9. Mathematics/Science Electives	20
10. Major	40
11. Electives[1]	21–31
12. Physical Education	5
Total Required for Graduation	196

	HOURS REQUIRED
1. *English Composition*: (ENG 101 & ENG 102). A minimum grade of 2.0 in ENG 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 & ENG 102).	10
2. *Foreign Language*: 1st, 2nd, 3rd quarters of one foreign language. (If all three quarters are exempted, 5 hours credit is awarded and the foreign language requirement is satisfied).	5–15
3. *Literature*: Courses from CML 121, 122, ENG 131, 132, Classical Culture 120, 121, French, German, Italian, Spanish 201, 202, Russian 401, 402, Spanish-American 205, 206, Greek, Latin 500.	10
4. *History*: Any courses in History numbered 111–399.	10
5. *Social Sciences*: Courses in Anthropology, Economics, History, Geography (not physical), Philosophy (not logic), Political Science, Psychology, Religion, Sociology, Speech Communication.	10
6. *Humanities/Social Science Electives*: Courses from Fine Arts, Foreign Languages, Literature, Social Sciences.	10
7. *Mathematics*: 15 hours, including Math 100 & Math 253, (Math 101 or 116 is prerequisite to Math 253 and the requirements should be completed during the freshman year).	15
8. *Science*: Three 10-hour sequences from Biology 101–102, Chemistry 121–122, or 127–128, Geography 120–121–122 or Geology 125–126, Physics 127–128 or 137–138.	30
9. *Mathematics/Science Electives*: Courses in the Biological/Physical Sciences Divisions.	20
10. *Major*: 40 hours approved by major department with minimum grade of 2.0 in each course. *Major Subject*: 20 hours in residence in one subject in course numbered 300 or higher. *Major Subject or other subjects in the Biological/Physical Sciences Division*: 20 hours with at least 10 of these in courses numbered 300 or higher.	40
11. *Electives*: To provide a total of 196 hours.[2]	21–31
12. *Physical Education*: All Freshmen & Sophomores are required to complete six quarters of physical education with passing	

grades except as provided under *Objectives* in Catalog.

	5
Total	196

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[1] *Five hours in social science must be taken in category 6 or 11 to satisfy the core curriculum.*

[2] *No more than 15 hours may be taken outside the Franklin College of Arts and Sciences and no credit* for Chemistry 111, 112, Geography 104, Physical Science 101, Basic ROTC may be counted among the 196 hours required for graduation.

13. *Grades*: To complete requirements for graduation, a minimum average of 2.0 is required in all grades received, and no more than one-fourth of the total hours earned may be in grades of 1.0. No student may graduate while on probation.
14. *Residence Requirement*: The minimum residence requirement for a baccalaureate degree is 90 quarter hours.
15. *Constitution Requirement*: All students are required to exempt or satisfactorily complete a course in American Government. Students who satisfy this requirement at the institution outside the state of Georgia must also pass the examination on the Georgia Constitution. (For Examination Schedule, see *Timetable of Classes*).
16. *History Requirement*: All students are required to pass examinations on the history of the United States and Georgia unless appropriate courses have been exempted or satisfactorily completed. (See *Objectives, General Catalog*). (For times when Examination is given, see *Timetable of Classes.*)
17. *Rising Junior Examination*: For Examination Schedule, see *Timetable of Classes* or Testing & Evaluation Office, Academic Building.
18. *Senior Exit Examination*: For Examination Schedule, contact Testing & Evaluation Office, Academic Building.
19. *Academic Advisers*: Each student in the Franklin College of Arts and Sciences is urged to see his Academic Adviser at least once each quarter. For an appointment with an adviser, Freshmen & Sophomores should go by the Dean's Office, New College. Juniors & Seniors should contact the Department in which they plan to major.
20. *Honors Courses*: Appropriate honors courses may substitute for corresponding courses in this curriculum.
21. *Advanced Placement*: Exemption of a course with credit is equivalent to having satisfactorily completed the course and may be so used in this curriculum. Course requirements may be satisfied by exemption without credit, in which case the number of electives must be increased to satisfy the 196 hour requirement.
22. *Waiver of Degree Requirements*: Course substitutions or waiver of requirements in this degree program may be made only upon written approval of the Dean or the Senate Committee on Academic Standards.
23. *Candidacy for a Degree*: After earning 135 hours, a student must apply for graduation in the Registrar's Office, Academic Building and have his program certified by the Dean. Failure to do this at the beginning of the senior year may result in postponement of graduation date.

Bachelor of Science in Chemistry

Advisers: Johnston, Waggoner

The curriculum for this degree offers training in the field of chemistry and its allied sciences for students who desire to enter commercial or government laboratories, to enter the teaching profession, to become associated with chemical industries in a non-technical position, or to pursue graduate work in chemistry in order to enter some field of research or college teaching.

All students who satisfactorily complete this curriculum are certified by the Department of Chemistry to the American Chemical Society as having completed the undergraduate training recommended by the A.C.S. An average of 2.5 or higher is required in chemistry and in other academic subjects in both the lower and upper division programs. No transfer student will be accepted as a candidate for this degree later than the beginning of his junior year. A student who wishes to take this degree should enter the University no later than the beginning of his sophomore year.

Requirements for the Bachelor of Science in Chemistry:

	HOURS
1. *English Composition* (ENG 101 and 102). (If ENG 101 is not exempted, a minimum grade of 2.0 in 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 and 102.)	10
2. *German* 101, 102, 103; or Russian 101, 102, 103.	5–15
3. *Literature*. Two courses from CML 121, 122; ENG 131, 132; CLC 120, 121; French 201, 202; German 201, 202; Italian 201, 202;	

Russian 401, 402; Spanish 201, 202; Spanish-American 205, 206.	10
4. *Social Science.* Anthropology, economics, history, geography (not physical), philosophy (not logic), political science, psychology, religion, sociology, or speech communication.	15
5. *Mathematics* 116, 253, 254, 255, and one from Mathematics 256, 458, 459, Statistics 500, 501.	25
6. *Physics* 137, 138, 239 (or 127, 128, 229).	15
7. *Chemistry* 127, 128, 129 or 121, 122, 123, 280 Chemistry 340, 341, 342, 381, 402L, 426, 427, 441, 491ABC, 496ABC, 580 and two courses from 347, 348, 349, 430, 431, 432, 444, 492, 493, 494, 495, 497, 581.	61–65
8. *Electives.* Courses to complete 196 hours. No more than 15 of these hours may be taken outside the College of Arts and Sciences.	10–29
9. Items 12 through 23 of the "Requirements for the Bachelor of Science Degree" are also requirements of this degree program.	

Bachelor of Science in Physics

Adviser: Nance

The curriculum for this degree is designed to give the best preparation possible to those students who desire to pursue a career in physics. It provides the necessary foundation for those students who wish to do graduate work toward advanced degrees so that they may enter some field of research or college teaching, for those who wish to seek employment in commercial and governmental laboratories, and for those interested in entering the teaching profession at the high school level.

No graduate below 2.0 in any physics or mathematics course is creditable toward this degree program and a grade average of 2.5 or higher is required in these courses.

Requirements for the Bachelor of Science in Physics.

	HOURS
1. *English Composition* (ENG 101 and ENG 102). (If ENG 101 is not exempted, a minimum grade of 2.0 in 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 and 102.	10
2. *Foreign Language*: Any foreign language currently taught at the University through the third quarter of study.	5–15
3. *Literature* Two courses from CML 121, 122; ENG 131, 132; CLC 120, 121; French 201, 202; German 201, 202; Italian 201, 202; Russian 401, 402; Spanish 201, 202; Spanish-American 205, 206; Greek, Latin 500.	10
4. *Social Science.* Anthropology, economics, history, geography(not physical), philosophy (not logic), political science, psychology, religion, sociology, or speech communication.	5
5. *Mathematics* 116, 253, 254, 255, 358, and 5 hours 400-level mathematics.	30
6. *Chemistry* 127, 128 (or 121, 122) and one other course.	15
7. *Biology* 101, 102.	10
8. *Physics* 137, 138, 239, (or 127, 128, 229), 332, 333, 404, 420, 430, 440, 450, 451, 465 and eight additional hours in Physics at the 400-level.	60
9. Items 11 through 23 of the "Requirements for the Bachelor of Science Degree" are also requirements of this degree program.	

Bachelor of Arts in Criminal Justice Studies

Adviser: Darby

The Criminal Justice Degree is designed to provide the foundations for professional development in the field of criminal justice. To this end, the program affords the student with a curriculum which is general, interdisciplinary, oriented toward the social and behavioral sciences, and academic in nature. Students in this program are preparing for careers in law enforcement, corrections and rehabilitation, and in the judicial system.

Students must satisfy all Regents', University, and College requirements. They must complete 40 hours in the major and a 15-hour internship. Courses in the program are drawn largely from the departments of Political Science, Psychology, and Sociology.

BACHELOR OF FINE ARTS DEGREE REQUIREMENTS

In addition to the programs in art, drama, and theatre, and music available under the Bachelor of Arts degree, the Division of Fine Arts also offers the Bachelor of Fine Arts degree and the Bachelor of Music degree. The purposes are to provide training in appreciation, to help students form standards of taste, to promote culture in the community, and to train performing artists and teachers. The division collaborates with other schools, divisions, and departments especially those of languages, education, and home economics.

	HOURS
1. English Composition	10
2. Foreign Language	10–20
3. Literature	10
4. History	10
5. Social Science	10
6. Science	20
7. Mathematics	5
8. Major and Approved Electives	106–116
9. Physical Education	5
Total Required for Graduation	196

	HOURS REQUIRED
1. *English Composition*: (ENG 101 & 102). A minimum grade of 2.0 in ENG 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 & 102).	10
2. *Foreign Language*: 1st, 2nd, 3rd, 4th quarters of one foreign language. (If the first three quarters are exempted, 5 hours credit is awarded; if all four quarters are exempted, 10 hours credit is awarded and the foreign language requirement is satisfied).	10–20
3. *Literature*: Courses from CML 121, 122, ENG 131, 132, CLC 120, 121, French, German, Italian, Spanish 201, 202, Russian 401, 402, Spanish-American 205, 206, Greek, Latin 500.	10
4. *History* Any courses in History numbered 111–399.	10
5. *Social Science*: Courses from two of the following areas: Anthropology, Economics, Geography (not physical), Philosophy (not logic), Political Science, Psychology, Religion, Sociology, Speech Communication.	10
6. *Science*: Any 10-hour sequence from the physical sciences, and any 10-hour sequence from the biological sciences. (Physical Science 101 and Geography 104 are considered a sequence in the physical sciences.)	20
7. *Mathematics*: Exemption with credit or the satisfactory completion of Math 100 is required.	5
8. *Major*: Art, Drama, or Music as approved by adviser with a minimum of 2.0 in at least 40 of the total hours of the major. *Electives*: To provide a total of 196 hours.[1]	106–116
9. *Physical Education*: All freshmen and sophomores are required to complete six quarters of physical education with passing grades except as provided under *Objectives* in Catalog.	5
Total	196

10. *Grades*: To complete requirements for graduation, a minimum average of 2.0 is required in all grades received and no more than one-fourth of the total hours earned may be in grades of 1.0. No student may graduate while on probation.
11. *Residence Requirement*: The minimum residence requirement for a baccalaureate degree is 90 quarter hours.
12. *Constitution Requirement*: All students are required to exempt or satisfactorily complete a course in American Government. Students who satisfy this requirement at an institution outside the state of Georgia must also pass the examination on the Georgia Constitution. (For Examination Schedule, see *Timetable of Classes*).
13. *History Requirement*: All students are required to pass examinations on history of United States and Georgia unless appropriate courses have been exempted or satisfactorily completed. (See *Objectives*, General Catalog). For Examination Schedule, see *Timetable of Classes*.
14. *Rising Junior Examination*: For Examination Schedule, see *Timetable of Classes* or Testing & Evaluation Office, Academic Building.

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[1] *No more than 15 hours may be taken outside the Franklin College of Arts and Sciences and no credit* for Basic ROTC may be counted among the 196 hours required for graduation.

15. *Senior Exit Examination*: For Examination Schedule contact Testing & Evaluation Office, Academic Building.
16. *Academic Adviser*: Each student in the Franklin College of Arts and Sciences is urged to see his Academic Adviser at least once each quarter. For an appointment with an adviser, Freshmen and Sophomores should go by the Dean's Office, New College. Juniors and Seniors should contact the Department in which they plan to major.
17. *Honors Courses*: Appropriate honors courses may substitute for corresponding courses in this curriculum.
18. *Advanced Placement*: Exemption of a course with credit is equivalent to having satisfactorily completed the course and may be so used in this curriculum. Course requirements may be satisfied by exemption without credit, in which case the number of electives must be increased to satisfy the 196 hour requirement.
19. *Waiver of Degree Requirements*: Course substitutions or waiver of requirements in this degree program may be made only upon written approval of the Dean or the Senate Committee on Academic Standards.
20. *Candidacy for a Degree*: After earning 135 hours, a student must apply for graduation in the Registrar's Office, Academic Building and have his program certified by the Dean. Failure to do this at the beginning of the senior year may result in postponement of graduation date.

Bachelor of Fine Arts in Art

Freshman and Sophomore Adviser: Coleman

The major in studio art offers eight fields of concentration: art education; crafts (ceramics, fabric design, jewelry and metalwork); drawing and painting; graphic design; interior design; photographic design; printmaking; and sculpture. Students who have majored in art education may be granted a professional certificate by the State Department of Education to teach art, upon recommendation of the dean of the College of Education. Other opportunities to major in art are provided in the following programs: Bachelor of Arts with a major in art history, College of Arts and Sciences; and Bachelor of Science in Education with a major in art; College of Education.

The objective of the Department of Art is to provide training in the fundamental principles of the creative visual arts. Emphasis is given to active experience with tools and materials. A well-balanced program with courses in all areas of art is so integrated that each course functions to advantage in relation to each of the other courses. From this integration the student is enabled to derive a knowledge of the basic principles underlying all art, and is thereby better equipped to interpret, appreciate, and create works of art.

The Department of Art occupies the Visual Arts Building, which contains an art gallery, spacious studios, classrooms, lecture rooms and laboratories. The Georgia Museum of Art houses the Eva Underhill Holbrook Memorial paintings which form the nucleus of a rapidly expanding permanent collection. The Main Library contains an extensive collection of books and prints in the field of art.

All candidates for the Bachelor of Fine Arts in Art must fulfill the requirements for the B.F.A. degree as set forth earlier in this section.

Academic Requirements
(common to all areas of concentration)

	HOURS
Mathematics	0–5
English 101–102	10
Literature	10
Social Science	10
Foreign Language	10–20
History	10
Science	20
Physical Education I, II (5 quarters)	5
Basic Courses	30

Art 120, 130, 230, 240, 287, 288 are prerequisite to all area concentration courses

Art Education

Art History (Senior Division)	10
Two-dimensional art studio	10
Three-dimensional art studio	10
Elective art studio	10
Education (EFN 303, EPY 304)	10
Art Education (EAR 335, 336)	10
EAR 400 or EXC 500, HED 117	8
Student Teaching (EAR 546, 547, 548)	15

Crafts

Art History (Senior Division)	10
Crafts: ceramics, jewelry and metalwork, or fabric design (minimum of 20 hours must be in one area)	40
Elective in art (other than crafts)	15
Approved Electives to complete 196 hours	

Drawing and Painting

Art History (Senior Division)	10
Drawing: Art 321, 322, 323A	15
Painting: Art 331, 332, 333, 334A	20
Printmaking	5
Approved Electives to complete 196 hours	

Graphic Design

Art History (Senior Division)	10
Art 320A, 321 and 331 or 341	15
Art 306A, 307A, 308A	15
Art 308B, 308C, 312	15
Art 309 or 310 or 311	5
Journalism 557 or Journalism 574	5
Art 324A, 325A or 326A	5
Approved Electives to complete 196 hours	

Interior Design

Art History (Senior Division)	10
Interior Design (Art 386A, 386B, 387A, 387B, 387C, 388A, 388B, 391, 392)	45
Approved electives to complete 196 hours	

Photographic Design

Art History (Senior Division)	10
Art 321	5
Graphic Design, including Art 306A	15
Printmaking	10
Photographic Design, Art 320ABC, Art 335AB	25
Electives to complete 196 hours	

Printmaking

Printmaking: Art 324A, 325A, 326a	15
ART 324B or 325B or 326	5
Art 301 (Senior project)	5
Drawing: Art 321, 322, 323a	15
Painting: Art 331 or 341	5
Three-dimensional studio	5
Senior Division Art History	10
Approved electives to complete 196 hours	

Sculpture

Art History (Senior Division)	10
Sculpture	30
Drawing and painting	10
Approved electives to complete 196 hours	

Art History

Students wishing to concentrate in Art History must follow the Bachelor of Arts Program. Declaring this major should be done as early as possible and not later than the Junior year.

Art 287 and 288 are applied toward the Fine Arts, Philosophy and Religion requirements of the Bachelor of Arts Program. Ten quarter hours of studio art from Art 120, 130, 230, 240 or 260 or approved substitutes, plus 30 quarter hours of Upper Division Art History will satisfy the minimum credit requirements of the Major in Art under the Bachelor of Arts Degree.

Bachelor of Fine Arts in Drama

Freshman and Sophomore Advisors: Baffico and Graham

The major in drama offers concentrations in dramatic performance for stage, screen, and T.V. and in design for stage and screen. Students may also meet the course requirements for secondary teaching certification and a teaching field (e.g. English) within the B.F.A. drama degree in a program of fourteen quarters. Other opportunities to major in drama are provided in the Bachelor of Arts program.

The Department of Drama offers specialized training in dramatic arts. However, many of the courses are open to all students who wish to enrich their knowledge and heighten their appreciation of the dramatic arts. The purpose of the program is three-fold: (1) to give an opportunity for talented students to prepare themselves for professional work in the fields of film, theatre, and television; (2) to make available for students in the University certain courses which will aid them in developing an intelligent interest in the fields of drama; (3) to train leaders for the educational fields—teachers, directors and technicians for schools, colleges, and civic theatres, film and T.V. production centers, and children's theatre.

In addition to the various courses, a series of productions is presented each season by the University Theatre, an organization designed for all students who are interested in any phase of dramatic production. The productions are planned in a way to give students, as nearly as possible, the actual experience of producing plays or films as they are created professionally. The Department of Drama occupies teaching and production areas in the Fine Arts Building, which houses the new Fine Arts Theatre as well as three other theatres. Scene shops, costume shops, dance and design studios, and film production facilities are also in the Fine Arts Building.

Special Requirements

All prospective candidates for the B.F.A. in drama must apply for review by the faculty before admission into the program.

All candidates for the Bachelor of Fine Arts in drama must fulfill the requirements for the B.F.A. degree as set forth earlier in this section.

Drama and Theatre

Freshman and Sophomore Years

	HOURS
English Composition	10
Social Science	10
Foreign Language	10–20
Drama 222, 230, 240, 250	20

Science	20
History	10
Approved Department Electives	5–10
Applied Drama 105 (1 hour), 205 (5 hours)[1]	

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[1] *All majors take Applied Drama each quarter in residence.*

Junior and Senior Years

Literature	10
Applied Drama 505 (6 hours)[1]	
Approved departmental electives	60
Electives to complete 196 hours, excluding applied drama	

Bachelor of Fine Arts in Music

Freshman and Sophomore Adviser: Waln

The B.F.A. major in music offers two fields of concentration; music literature or theory. Other opportunities to major in music are provided in the following programs: Bachelor of Arts with a major in music, concentration in music literature or theory; and Bachelor of Music with a major concentration in applied music (performance), composition, church music, music education or music therapy.

The junior division program for a major in music includes the required academic courses in addition to courses in elementary music theory, harmony, history, and applied music. These courses are designed to give the student a practical knowledge of the theory of music, ear training, harmony, sight singing and the general history of music. The senior division courses are designed to give the student a broader and more cultural background in music. Applied music courses are offered each year to music majors and also to students of other departments if they can be accommodated.

Much stress is laid on public performance through music appreciation programs and student recitals. Open to qualified students throughout the campus, the University Chorus and Orchestra present frequent concerts. Other performing groups include the University Band, the Varsity Band, the Symphonic Wind Ensemble, the Georgia Singers, the Men's Glee Club, the Women's Glee Club, and string, woodwind, brass, and percussion ensembles. Voice students are offered training in opera. An outstanding concert series of internationally recognized artists and a chamber music festival in the spring add to the cultural atmosphere of the campus.

Special Requirements

All prospective music majors are required to take a placement audition in applied music. This audition is heard by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. Further requirements are:

1) Pass a keyboard proficiency test;
2) Participate in the performing organization appropriate to the major performance medium each quarter (e.g., string majors participate in orchestra, vocal majors participate in choral organization, etc.); and
3) Attend and participate in a minimum number of recitals per quarter.

All candidates for the Bachelor of Fine Arts in music must fulfill the requirements for the B.F.A. degree as set forth earlier in this section.

Freshman and Sophomore Years
(common to both areas of concentration)

	HOURS
English 101–102	10
Social Science	10
Foreign Language	10–20
Fine Arts (Music 110, 183 and 387, 388, 389 or 390)	15
Science	20
Mathematics	5
History	10
Fine Arts (Music 122, 223, 224 and 283)	15
Literature	10
Physical Education	5

Music Literature

Junior and Senior Advisers: Ennulat, Jameson

Music 234, 235, 236, 310, 9 hours of music history electives, and 387, 388, 389, or 390	30
Thesis[1]	2
Applied Music 383, 483	18
Art	5
English (one approved senior division course)	5
Electives to complete 196 hours	

Music Theory

Junior and Senior Years

Music 234, 235, 236, 310, 9 hours of theory electives, and 387, 388, 389, or 390	30
Thesis[1]	2
Applied Music 383, 483	18
Art	5
English (one approved senior division course)	5
Electives to complete 196 hours	

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[1] *As a substitute, 30 minutes may be added to the 30 minute recital required in 483C.*

BACHELOR OF MUSIC DEGREE REQUIREMENTS

See section on "Special Requirements" for all music majors listed earlier under Bachelor of Fine Arts in music.

Major in Applied Music Performance or Composition

Adviser: Ennulat, Waln

Freshman and Sophomore Years

	HOURS
English Composition (ENG 101–102). Minimum grade of 2.0 required. A minimum grade of 2.0 in 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 and 102.	10
Foreign Language.[1] Any foreign language currently taught at the University through the fourth quarter of study.	10–20
History. Any courses in history numbered 111–399	10
Mathematics. Exemption or the satisfactory completion of Mathematics 100 is required.	5
Physical Science 101 or Geography 104	5
Social Science. Courses from two of the following areas: anthropology, economics, geography (not physical), philosophy (not logic), political science, psychology, religion, sociology, speech communication	10
Music 110,111, 112	9
Music 122, 223, 224	12
Music 184[2] and 284[3].	24
Literature. Two courses from Western World Literature (CML 121, 122), Literature in English (ENG 131, 132), Classical Culture (CLC 120, 121), Foreign Language Literature (French 201, 202, German 201, 202; Italian 201, 202; Russian 401, 402; Spanish 201, 202; Spanish-American 205, 206; Greek, Latin 500.)	10
Biology 101, 102 or Botany 121, 122.	10
Physical Education	5

Junior and Senior Years

	HOURS
Music 387, 388, 389, 390, or 590	6
Music 234, 235, 236	9
Music 384, 484 (including junior and senior recitals)[4]	24
Music310	3
Music 361 and 2 hours from Music 362, 363, 364	6
Music history elective(s)	5
Theory or music history elective(s)	5
Ensemble electives	6
Music elective(s)	5
Art	5
	74

Items 9 through 16 of the "Requirements for the Bachelor of Fine Arts Degree" also are requirements of this degree program.

For composition majors: A group of original pieces to satisfy requirements of Music 284 and an extended original work in large form in lieu of a senior recital, each to be presented in concert. A minimum of 12 elective credits must be taken in theory.

Major in Music Education

Advisers: Ennulat, Leglar, Ligotti, Lowe, Placek

Freshman and Sophomore Years

	HOURS
Music 182	6
Music 241, 242, 243, 244, 245 or 246	4
Music 288, 289, 290, 387, 390, or 590	3
Music 110, 111, 112	9
Music 122	2
English Composition (ENG 101–102). A minimum grade of 2.0 in 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 and 102.	10
Biology 101, 102, or Chemistry 111, 112 or Botany 121, 122	10
Mathematics. Exemption or the satisfactory completion of Mathematics 100 is required.	5

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[1] Majors in voice are permitted to substitute one language (Italian recommended) through 103 and one language (French or German recommended) through 102 for the language requirement.

[2] Voice majors, instead of Music 184, will register for Music 182 and Music 246 (6 quarters). Composition majors will register for Music 182 in an applied field and 6 quarters of Music 241–246 (those using a keyboard instrument as the applied field select 6 hours from 241–245; others must select 6 hours of 246).

[3] Music184 for voice and composition majors.

[4] Music 284 and 384 for voice and composition majors.

Physical Education	[illegible]
Music 282	6
Music 240, 241, 242, 243, 244, 245, or 246	5
Music 288, 289, 290, 387, 390, or 590	3
Music 234, 235, 236	9
Music 223, 224	10
Music 201	1
Social Science. Courses from two of the following areas: anthropology, economics, geography (not physical), philosophy (not logic), political science, psychology, religion, sociology, speech communication.	10
Literature. Two courses from Western World Literature (CML 121, 122), Literature in English (ENG 131, 132), Classical Culture (CLC 120, 121), Foreign Language Literature (French 201, 202; German 201, 202; Italian 201, 202; Russian 401, 402; Spanish 201, 202; Spanish-American 205, 206; Greek, Latin 500).	10
History. Any courses in history numbered 111–339.	10

Junior and Senior Years

Music 382	6
Music 240, 241, 242, 243, 244, 245, or 246	2
Music 247, 248, or 491	3
Music 361	2
Music 362, 363, or 364	4
Music 310	3
Music 324	2
Music 325, 326, or 327	2
Music Literature elective	3
Education 171, 303, 304	16
Music 240, 482	4
Music 241, 242, 243, 244, 245, or 246	4
Music 247, 248, or 491	2
Music 312, 313, 547	15
Art 300 or 305	5
Education 345, 546, 547, 548	16

Items 9 through 16 of the "Requirements for the Bachelor of Fine Arts Degree" are also requirements of this degree program.

Major in Music Therapy

Advisers: Ennulat, Ligotti, Parker.

The music department offers an undergraduate curriculum to provide professional education for future music therapists. This is a four-year program. A six-month internship, to be completed at a selected training hospital, is required for national registration.

Freshman and Sophomore Years

	HOURS
Music 182	6
Music 241, 242, 243, 244, 245, or 246.	4
Music 288, 289, 290, 387, or 390.	3
Music 110, 111, 112.	9
Music 122.	2
English Composition (ENG 101–102) A minimum grade of 2.0 in 101 is prerequisite for ENG 102 and a minimum average of 2.0 is required for ENG 101 and 102.	10
Mathematics. Exemption or the satisfactory completion of Mathematics 100 is required.	5
Biology 101, 102.	10
Music 282,	6
Music 240, 241, 242, 243, 244, 245, or 246.	4
Music 288, 289, 290, 387, or 390.	3
Music 234, 235, 236.	9
Psychology 101.	5
Sociology 105.	5
Literature. Two courses from Western World Literature (CML 121, 122), Literature in English (ENG 131, 132), Classical Culture (CLC 120, 121), Foreign Language Literature (French 201, 202; German 201, 202; Italian 201, 202; Russian 401, 402; Spanish 201, 202; Spanish-American 205, 206; Greek, Latin 500).	10
History. Any courses in history numbered 111–339.	10

Junior and Senior Years

Music 382	6
Music 241, 242, 243, 244, 245, or 246	2
Music 247, 248, or 491	3
Music 310	3
Music 324	2
Music 325, 326, or 327	2
Music 223, 224	10
Music 361	2
Music 362, 363, or 364	4
Educational Psychology	5
Music 540, 541	6
Music 545	3
Music 546	3
Music 482	6
Music 240, 241, 242, 243, 244, 245, or 246	2
Music 247, 248, or 491	2
Art 300 or 305	5

Anthropology 102	5
Psychology 423	5
Music 542, 543	6
Music 544	5

Items 9 through 16 of the "Requirements for the Bachelor of Fine Arts Degree" are also requirements of this degree program.

COMBINED DEGREES AND PRE-PROFESSIONAL PROGRAMS

Bachelor of Science (Premedicine) and Bachelor of Science (Predentistry)

Adviser: Sansing
A baccalaureate degree is generally required for admission to a school of medicine or dentistry, hence most students are advised to follow the regular B.S. or A.B. programs outlined earlier in this section and to include those courses prerequisite for admission to the medical or dental school of their choice. However, students of outstanding ability who are admitted to the School of Medicine or the School of Dentistry, Medical College of Georgia, before completion of the baccalaureate degree may be awarded the B.S. (Premedicine) or the B.S. (Predentistry) from the University upon successful completion of the first year in professional school, if they satisfy the requirements outlined below. (Neither the satisfactory completion of the program or a baccalaureate degree assures admission to any medical or dental school.)

	HOURS
English 101 and 102: (Minimum grade of 2.0)	10
Foreign language: (see B.S. program)	5–15
Literature: (see B.S. program)	10
History: any course numbered 111–399	10
Social sciences: (see B.S. program)	10
Social sciences/humanities: (see B.S. program)	10
Mathematics: (must include MAT 253)	10
Biology 101 and 102	10
General chemistry 121, 122 and 123 (or 127, 128 and 129)	15
Organic chemistry 340 and 341 (or 240 and 241)	10
Physics 127 and 128 (or 137 and 138)	10
Electives in Arts and Sciences to complete 135 hours	15–25
	135

Other general requirements for the degree are listed under "Requirements for the Bachelor of Science Degree." These include 6 quarter hours of Physical Education and a number of examinations and/or course requirements which must be met by all students graduating in the University system of Georgia. One exception for these two degrees to the general requirements listed; residence requirements may be satisfied by completing 45 quarter hours in residence at the University in courses approved by the Dean of the Franklin College of Arts and Sciences.

Bachelor of Science (Pre-Veterinary Medicine)

Advisers: Adsit, Fletcher
This program is designed for those students who wish to obtain both the B.S. and D.V.M. degrees. Under this program a student may, after the successful completion of his first year at The University of Georgia College of Veterinary Medicine, receive the B.S. degree. The student considering this option should realize that competition for admission to the College of Veterinary Medicine is such that there are four to five persons applying for each available position. The student should have one or more alternative careers in mind in the event that he/she is not accepted. It is strongly recommended that the student be enrolled in an undergraduate degree program. The curriculum, for the first two years, is the same as that in the B.S. (pre-medicine) program with the exception that Dairy 103, Animal Science 101 and Poultry Science 160 must also be taken, and Botany 121 replaces Biology 101–102.

Junior Year

	HOURS
Chemistry 280, 340, 341, 342	20
Physics 229	5
Literature (see B.S. program)	10
Plant Pathology 358 or Biology 320	5
Animal Science 358	5
Speech 108	5
Electives in arts and sciences if needed to complete 135 hours	

Three quarters of residence work, including at least 45 hours, 30 of which must be in courses numbered 200 or above in the College of Arts and Sciences, will be required after admission to senior division standing.

American and Georgia history requirements must be satisfied before admission to the College of Veterinary Medicine. Neither the satisfactory completion of the pre-vet program or a baccalaureate degree assures admission to any veterinary college.

Senior Year

The satisfactory completion of the first year, College of Veterinary Medicine, The University of Georgia.

Items 12 through 23 of the "Requirements for the Bachelor of Science Degree" are also requirements of this degree except that the residence requirement may be satisfied by completing the junior year in residence with 30 of the 45 hours in courses numbered 200 or higher.

Bachelor of Science and Bachelor of Science in Engineering

The University of Georgia cooperates with the Georgia Institute of Technology in giving a five-year program leading to a B.S. degree from The University of Georgia and the B.S. degree in Engineering from the Georgia Institute of Technology. All students interested in this program should see the dean of the College of Arts and Sciences.

Pre-Forest Resources Program*

Adviser: Parker

Details regarding admission to the professional program in the School of Forest Resources appear on page 114. The specified 90-hour pre-professional forest resources curriculum must be completed while the University of Georgia underclassman is enrolled in the College of Arts and Sciences.

Pre-Journalism Program*

Adviser: Abney

To be admitted to the School of Journalism a student must have completed a minimum of 90 quarter hours exclusive of basic ROTC and physical education. Details regarding degree requirements can be found on page 135.

Pre-Pharmacy Program*

Adviser: Tebo

To be admitted to the professional program in the School of Pharmacy, the student have have completed a minimum of 90 quarter hours of pre-pharmacy courses as specified below, exclusive of basic ROTC and physical education. Students with high academic average, having 90 hours of credit, may be admitted with not more than 5 quarter hours of deficiencies in non-science required courses, provided such deficiencies may be completed during the first professional year.

For complete information concerning the pre-pharmacy core curriculum requirements, refer to the School of Pharmacy section, page 142. For information concerning the pharmacy professional program, refer to the School of Pharmacy Bulletin, available by writing and requesting copies from: Dean, School of Pharmacy, The University of Georgia, Athens, Georgia 30602.

Upon completion of this program, the student will be eligible to apply for admission to the School of Pharmacy. Application should normally be made to the dean of the School of Pharmacy during the winter quarter of the sophomore year.

Pre-Theology Program

Students planning to enter a theological seminary following graduation from the University should consult the appropriate adviser in the Department of Philosophy and Religion not later than the beginning of the junior year.

Bachelor of Arts or Bachelor of Science (with Provisions for a Professional Secondary School Teaching Certificate)

The requirements for either degree total 180–201 hours with 31–41 to be taken in the College of Education and the remainder to be taken in the College of Arts and Sciences. Students interested in meeting teacher certification requirements should consult an appropriate adviser Office of Associate Dean, College of Education, as well as their adviser in the College of Arts and Sciences. Each student's program must then have the approval of both advisers and the dean's office of each college.

REQUIREMENTS:

1) Students must meet the same requirements as College of Education majors with regard to "Admission to Teacher Education Program," "Admission to Enrollment in Curriculum and Methods" and "Admission to Student Teaching." These are described in the College of Education section of this bulletin.
2) Specific education courses to be taken as electives will vary with the teaching field in which certification is desired.
3) A maximum of 35 hours in the College of Education may be counted as electives in these programs.

**Does not lead to a degree from College of Arts and Sciences.*

THE COLLEGE OF BUSINESS ADMINISTRATION

ADMINISTRATIVE OFFICERS

William Crawford Flewellen, Jr., B.S., M.S., Ph.D., *Dean*

Albert W. Niemi, Jr., A.B., M.A., Ph.D., *Acting Associate Dean, Director of Research*

Rudolph A. White, B.S., M.S., Ph.D., *Director of Administration*

Jack T. Davis. B.S., M.B.A., *Acting Director of Services*

Clarence D. Billings, B.S., Ph.D., *Coordinator of Graduate Studies*

Irwin Harvey, B.S., M.B.A., *Coordinator of Undergraduate Studies*

Arden W. Dow, B.B.A., *Assistant to the Dean*

GENERAL INFORMATION

Purpose and Organization

The College of Business Administration intends not only to teach undergraduate and graduate students, but also to conduct a broad program of basic and applied research and to render extensive service to society. The particular task is one of educating persons for the practice of business administration.

Attainment of a broad education requires that the student concentrate his first two years in the arts and sciences. The major portion of the remaining two years is focused in a common body of knowledge in business and administration, on top of which the individual will build a specialization.

The fields of specialization include accounting, business systems, economics, finance, general business, international business, industrial relations, management, marketing, organization management, real estate, and risk management and insurance.

Facilities

The College of Business Administration uses all of the facilities of the University, including the Computer Center and other units.

Most of the administrative offices and some of the classrooms are provided in the five-story R. Preston Brooks Hall on the north campus.

Accreditation

The College of Business Administration is a member of the American Assembly of Collegiate Schools of Business, the recognized national accrediting association for collegiate schools of business.

Degree Offered

The College of Business Administration offers the undergraduate degree, Bachelor of Business Administration.

Several graduate degree programs in business are described in the Graduate School Bulletin, including the Master of Business Administration, Master of Accountancy, and the Master of Arts and Doctor of Philosophy degrees in business-related fields. Joint degree programs in Master of Business Administration-Law and Master of Accountancy-Law are also offered. Prospective candidates may obtain information on these programs by writing the director of graduate studies in business.

Degree Requirements

All students should acquaint themselves with the degree requirements applicable to all students of the University as set down in the General Information section of this bulletin.

In order to qualify for a Bachelor of Business Administration Degree a student must meet the entrance requirements, be enrolled in one of the major disciplines and meet all of the degree requirements as set forth by the College of Business Administration.

Hours

A minimum of 195 quarter hours is required for the Bachelor of Business Administration degree.

Transfer Students

The specific credit for work done at other institutions which will apply toward the Bachelor of Business Administration degree is determined by the dean of the College of Business Administration. The amount of such transfer credit shall not in any case exceed that allowed by the director of admissions of the University. Allowance of transfer credit by the director of admissions does not mean necessarily that all of such credit will be accepted toward a Bachelor of Business Administration degree.

Transfer students admitted for the fall quarter whose credits are received in time for evaluation by the Director of Admissions before the beginning of the quarter, will receive a check-list from the Office of Undergraduate Studies indicating the application of accepted transfer credits toward the Bachelor of Business Administration degree requirements.

Regulations governing transfer students are given in the General Information section.

Honors Program

Coordinator: Wilkerson

In September, 1963, the faculty of the College of Business Administration established an honors program, which is now coordinated with the University's Honors Programs. Under this program, a student who has the academic qualifications for honors work may carry a full program of such studies through the major part of the junior year. Honors sections are not provided in major courses, for it is believed that normally close working relations with professors at that level makes such action unnecessary.

Admission of student to the honors program is by invitation only. Beginning freshmen are admitted on the basis of high school grades and scores on the College Entrance Examination Board Scholastic Aptitude tests, and on the basis of placement and qualifying examinations administered by the University. For all other students, grades made at the University determine admission to the program. To be admitted to the program and to remain in it, a student should have a cumulative scholastic average of 3.5.

Honors courses available in the College of Business Administration include: Principles of Accounting (ACC 112H and 113H); Legal Environment for Business (ALL 280H); Business Law (ACC 380H); Principles of Economics (ECN 115H and 116H); Economic Development of the United States (ECN 143H); Statistical Analysis for Business (QM 322H); Labor Economics (ECN 396H); Money and Banking (FIN 336H); Business Finance (FIN 337H); Principles of Organization and Management (MAN 362H); and Principles of Marketing (MKT 369H).

Academic Advisers

Academic advisement in the College is coordinated by the Coordinator of Undergraduate Studies. Students are advised by the faculty of their major department. Each major department has a coordinator of advisers who is responsible for supervising the overall advisement program in his particular department.

Residence

A minimum of 90 quarter hours must be taken in residence at the University. Business administration students, however, must take at least 45 hours of senior division business courses in residence including at least 25 hours in a major field.

Grades

Grades of 2.0 or better are required for English 101, English 101 and 102 combined, major courses (30 hours) and Business Policy 599.

BACHELOR OF BUSINESS ADMINISTRATION DEGREE REQUIREMENTS

Core Curriculum

For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum* page 24.

		HOURS
AREA I HUMANITIES		20
English 101, 102	10	
From the following: Comparative Literature 121, 122; English 131, 132; Foreign Language (literature) Classical Culture 120 and 121; Philosophy; Religion; Drama; Music and Art	10	

AREA II MATHEMATICS AND NATURAL SCIENCE		20
Mathematics 103 and 204	10	
Laboratory Science (any 10-hour sequence from the following): Biology 101, 102; Botany 121, 122; Zoology 225, 226; Physics 127, 128 or 229 or Physics 137, 138 or 239; Chemistry 121, 122 or Chemistry 111, 112; Geology 125, 126; Geography 120, 121, 122	10	
AREA III SOCIAL SCIENCES		20
Political Science 101	5	
History 100, 111, 112, 251, 252	5	
Psychology 101	5	
Sociology 105	5	
AREA IV COURSES RELATED TO MAJOR		30
Accounting 110, 111	10	
Economics 105, 106	10	
Management Science 209	5	
Management 201 or 202	5	

Required Curriculum

Freshman and Sophomore Years

	RECOMMENDED HOURS	QTR.
Behavioral & Communications Sequence		
English 101 (Grade of C or better required)	5	1
English 102 (average of 2.0 required in ENG 101—102 combined)	5	2
Sociology 105	5	2
Psychology 101	5	3
Management 201, 202, JRL 204, or EBE 401	5	3–4
Environmental Sequence		
Political Science 101	5	1
History (100, 111, 112, 113, 251 or 252)	5	3
Economics 105	5	4
Economics 106	5	5
Accounting 270		5
6		
Quantitative Sequence		
Mathematics 103	5	2, 3, or 4
Accounting 110, 111	5	4
Management Science 209	5	5
Mathematics 204	5	6
Management Science 312	5	7
General		
Laboratory Science, sequence of two selected from the following: Biology 101—102, Botany 121—122, Chemistry 111—112, Chemistry 121—122, Geography 120—121—122, Geology 125—126, Physics 127—128	10	1 & 2
Humanities, any two of the following: Comparative Literature 121, 122, English 131, 132, Foreign Language 103, 104, 201, 202, Classical Culture 120, 121, Philosophy, Religion, Music, Art, Drama.	10	5–7
Physical Education	5	1–5

Junior and Senior Years

(Forty-five hours of senior division business courses must be taken in residence including at least 25 hours of major courses).		
Finance 330	5	7
Management 351	5	7
Management 320	4	8
Marketing 360	5	8
Environmental Electives Five hours from Group A: ECN 133, 134, 386, 406, 436, 437, 448, 469, FIN 326 or 434. Five hours from Group B: ACC 370, 576, INS 381, 506, MAN 401, 540, MKT 558, 559, RE 390 or 512. Five hours optional elective from A or B	15	8–10
Major Concentration	30	8–12
Business Policy 599 (May be taken from any offering department)	5	12
Non-Business Electives (May be selected from any course outstide the College of Business Administration. Appropriate course prerequisites must be met).	10	9–10
Free Electives (May be selected from any school or college of the University).	11	11, 12
Total Minimum Hours	195	

Other Requirements

Students seeking the B.B.A. degree as a condition of graduation must offer a passing score on the University System rising junior examinations, explained on page 25 of the General Information section of this bulletin. An appropriate Exit Exam, with a satisfactory grade, is required of seniors receiving a B.B.A. degree.

Students will not receive credit for senior division work (courses numbered 300 or above) until the English 101–102 course requirement is satisfactorily completed. Junior status is required for all senior division (300 level or above) courses.

Foundation courses, particularly those in the quantitative stream, must be completed first if students are to benefit most from professional business administration courses. Accordingly, before enrolling in major courses for degree credit, students must have completed 90 hours including Accounting 111 and Management Sciences 312. Accounting 111 and/or Management Sciences 312 may be taken concurrently with the first major course(s).

Substitutions for major courses must be approved in advance and in writing by the student's major adviser.

MAJORS

Accounting (ACC)

Head: Windal

The major in accounting is designed to give the student an understanding of the theory of accounting as it is used in our society. A student may concentrate in courses leading him toward a private, public, or governmental accounting career.

Accounting education also provides an excellent background for non-business professions such as law, and is sound basis for advancement to top level management positions.

Required courses for all majors in accounting:

	HOURS
Accounting 353 (Intermediate Accounting I)	5
Accounting 354 (Intermediate Accounting II)	5
Accounting 514 (Cost Accounting)	5
Accounting 515 (Income Taxation)	5
Accounting 572 (Auditing Principles)	5
At least one elective course	5

The department offers other upper division courses for those students wishing to acquire specialized training in accounting. He may select additional courses from those listed below after consultation with his adviser.

Accounting 316 (Introduction to Data Processing Systems)	5
Accounting 516 (Advanced Cost Accounting)	5
Accounting 518 (Governmental Accounting)	5
Accounting 519 (Advanced Income Taxation)	5
Accounting 521 (Introduction to Programming Systems)	5
Accounting 522 (Current Accounting Theory)	5
Accounting 556 (Accounting Problems)	5
Accounting 573 (Auditing Problems)	5
Accounting 579 (Functions of the Controller)	5

Business Systems

In modern business enterprise, accurate up-to-date information is necessary in all phases of operations. With the advent of the electronic computer, business systems technology for data processing has assumed a vital role in business, commerce and industry. Correspondingly, the demand for business-related education in this field has increased greatly. The business systems program is designed to meet this need.

Computer-based business systems are now used in firms of varying size and complexity. These systems make it practical to automate much of the business data necessary for efficient operations. In addition these business systems provide the manager with better information for making decisions affecting the business.

The business systems program incorporates both accounting and other types of managerial data requirements. It brings together into one program management science, computer technology, and systems analysis and design. These systems are concerned with many types of information which are used by business firms in day-to-day activities. The systems approach enables the student to understand the operation of a business as an integral whole and provides him with analytical tools to help him succeed in his future activities. The program will familiarize students with data processing technology and enable them to analyze the business firm as an operating system.

Required courses:

	HOURS
Accounting (Management) 316 (Introduction to Business Data Processing Systems	5
Management (Accounting) 550 (System Analysis and Design)	5
Management (Accounting) 551 (Managing Business Data Processing Systems)	5

Computer Science 500 (Fortran Programming) or Computer Science 503 (Cobol Programming)	5
Optional Courses (courses recommended to complete the 30 hours necessary for the major):	
Accounting 355 (Management Accounting)	5
Management 541 (Computers and Management)	5
Accounting (Management) 521 (Introduction to Programming Systems)	5
Accounting 579 (Quantitative Methods for Accounting)	5

The business systems major is an interdepartmental offering of the College of Business Administration through the Department of Accounting and the Department of Management in cooperation with the University of Georgia Computer Center.

Economics (ECN)

Head: Kamerschen

Students may major in economics in *either* the College of Business Administration *or* the Franklin College of Arts and Sciences.

An understanding of the economic realities is essential to the effective management of both private and public enterprise. Leaders in these areas must have an appreciation of the significance of general economic developments for the decisions that they make. Only through intelligent planning and coordination based upon an understanding of fundamental economic relationships can our nation adequately fulfill its responsibilities both at home and abroad. The program of training in economics is an outgrowth of this basic need.

Students majoring in economics in the College of Business Administration take 30 hours of economics major courses numbered 300 or above.

	HOURS
Required for all economics majors:	
Economics 405 (Intermediate Microeconomic Theory)	5
Economics 406 (Intermediate Macroeconomic Theory)	5
Note: Neither course is a prerequisite to the other.	
In addition, economics majors complete 20 hours (four courses) which they may choose from the following list:	
Economics 326[1] (Money and Banking)	5
Economics 386 (Labor Economics)	5
Economics 402 (Economics of Natural and Environmental Resources)	5
Economics 410 (Economic Growth and Development)	5
Economics 434[1] (Public Finance)	5
Economics 435[1] (State and Local Public Finance)	5
Economics 436 (Business Fluctuations)	5
Economics 437 (Comparative Economic Systems)	5
Economics 447 (Private Enterprise and Public Policy)	5
Economics 448 (Public Utilities, Public Regulations, and Public Enterprise)	5
Economics 449 (Government and Business)	5
Economics 450[1] (Monetary Theory)	5
Economics 469 (National Income Accounting and Measurement)	5
Economics 480 (International Trade: Theory and Policy)	5
Economics 481[1] (International Finance: Theory and Policy)	5
Economics 495 (Economics of Population and Human Resources)	5
Economics 496[1] (Managerial Economics)	5
Economics 497 (Economic Evolution of the United States)	5
Economics 499 (Quantitative Analysis for Economists)	5
No more than two of the following courses:	
Economics 489 (The Labor Movement)	5
Economics 490[2] (Labor Legislation)	5
Economics 491[1] (Collective Bargaining)	5
Economics 493 (Industrial Relations Systems)	5
Economics 494 (Labor Market Analysis)	5

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[1] *These courses are crosslisted as FIN 326, FIN 434, FIN 435, FIN 450, FIN 481, MAN 490, MAN 491, and MAN 496. They may be taken under these numbers as economics major courses.*

Finance (FIN)

Head: Verbrugge

The major in finance has been designed to provide the student with the tools of financial analysis. These tools can be used in positions either as a financial executive or a financial analyst for commercial banks, investment banks, life insurance companies, or other financial institutions.

The field is divided into five major segments: the financial process, public finance, financial institutions, investments, and the economics of finance. A student by taking courses in finance combined with courses in accounting, economics or management can prepare himself for a position as a financial executive.

Recommended Courses:	HOURS
Finance 326 (Money and Banking) (Required of all Banking and Finance majors)	5
Finance 430 (Corporation Financial Policy)	5
Finance 431 (Investments)	5
Finance 432 (Investment Management)	5
Finance 434 (Public Finance)	5
Finance 435 (State and Local Public Finance)	5
Finance 439 (Financial Planning and Control)	5
Finance 450 (Monetary Policy)	5
Finance 451 (Commercial Banking)	5
Finance 452 (The American Financial System)	5
Finance 481 (International Finance: Theory and Policy)	5
Finance 487 (Commodity Markets)	5
Finance 488 (Security Analysis)	5
Accounting 355 (Management Accounting)	5
Accounting 515 (Income Taxation)	5
Economics 436 (Business Cycles)	5
Real Estate 510 (Real Estate Finance)	5
Finance 599 (Business Policy)	5

Students interested in problems of governmental finance can take a specially designed major to fit their interests. Recommended courses for this major in public finance are:

Accounting 518 (Governmental Accounting);
Accounting 519 (Tax Accounting);
Economics 406 (Intermediate Machroeconomic Theory);
Finance 434 (Public Finance);
Finance 435 (State and Local Public Finance);
Finance 450 (Monetary Policy);
Politcal Science 443 (Public Finance Administration);
Political Science 446 (Government Organization and Administrative Theory).

General Business

This major is designed for students who wish to obtain a general training in business administration. It is especially appropriate for those who will eventually become owners or managers of small business concerns.

With the assistance of his adviser, the student may plan his own program of study in general business provided that no more than two major courses from any one department may be used.

International Business

Adviser: Clement

A growing number of large and small U. S. companies transact a significant and continually expanding portion of their business through international channels. In the future, business administration graduates will be increasingly involved with the international problems of modern business. The great majority of multinational companies are headquartered in the United States and are contributing importantly to this nation's status as the world's leading trader, international investor, and lender. Meeting the many challenges implicit in this situation requires special knowledge and skills of personnel engaged in the planning and administration of both business enterprises and governmental organizations with overseas relationships.

This program provides opportunities for students to gain the knowledge and skills required for international business careers while, at the same time, assisting them in developing an understanding of the mechanisms and institutions of the international economy. It is designed for students for those desiring to pursue management careers with domestic firms participating in or affected by international business.

Required Courses:	HOURS
Economics/Finance/Management 341 (The Environment of International Business)	5
Marketing 558 (International Marketing)	5
Finance 481 (International Finance)	5
Management 552 (International Business Policy)	5
Major elective courses (two of the following or area study):	
Economics 480 (International Trade Theory)	5
Economics 410 (Economic Growth and Development)	5
Economics 437 (Comparative Economic Systems)	5
Geography 358 (Economic Geography)	5

Sociology 405 (Cultural Anthropology)	5
Political Science 420 (International Relations)	5
Economics 493 (Industrial Relations Systems)	5
Area Study (in lieu of major electives with adviser's approval). Students may select two courses dealing with a specific geographical region for concentration; e.g., Latin America, Africa, Asia or Europe, and may take these courses in one or more departments of the University; e.g., geography, anthropology, or political science.	10

Students are urged, but not required, to supplement their background for effective participation in international business by studying one or more foreign language. No major credit is given for language study, although students earn general university credit.

Students may earn credit in foreign study programs, business economics, or other areas with approval of their major adviser.

Industrial Relations

Advisers: Kagerer and Beadles

The labor relations-personnel management option is broadly oriented. It encompasses labor relations and personnel management courses and provides an essential background for managers dealing in labor relations, personnel administration or line management where effective selection, training, supervision, and motivation of employees is an essential of success.

This program also includes courses in labor market analysis, the economics of manpower utilization and industrial relation systems that are needed for anlysis and policy determination in the labor sector of the economy.

Many of the principles and issues studies are urgent matters of public concern. Hence, study in the field provides information for responsible citizenship as well as training for future employment.

The program is jointly offered by the economics and management departments.

Students will take one required and two selected courses from each field as outlined below (other courses may be substituted for the required and optional courses with permission of the adviser).

Personnel Management

Required: Management 585 (Personnel Administration)

Select two:

Management 582 (Personnel Measurement)

Management 586 (Wage and Salary Administration

Management 588 (Personnel Selection and Placement)

Management 594 (Manpower Planning and Development)

Management 595 (Administrative Practices)

Labor Relations

Required: Economics 386 (Labor Economics)

Select two:

Economics 341 (Environment of International Business)

Economics 480 (International Trade: Theory and Policy)

Economics 489 (The Labor Movement)

Economics 490 (Labor Legislation)

Economics 491 (Collective Bargaining)

Economics 493 (Industrial Relations Systems)

Economics 494 (Labor Market Analysis)

Business Policy 599 is required of all B.B.A. candidates. It is recommended that all MANAGEMENT MAJORS take MAN 559—Business Policy and all ECONOMICS MAJORS take ENC 599—Business Policy.

Management (MAN)

Head: Huseman

The essence of business operation is the combining of resources of all kinds into an effective going concern. Because that task is as complex as it is challenging and fascinating, this program of study recognizes that careers in management will normally be fashioned by a long process of development on the job. Training is designed primarily to provide the student with tools which will both facilitate on-the-job development and make certain that this learning will be solidly grounded. The focus of attention will be on principles and on the making of decisions in real-life situations. Each student will elect a concentration of specialization area around which to shape his major program. Areas of concentration or specialization for management majors include: business and society; business systems/information systems; general management; interpersonal and organizational communication; industrial relations; personnel/human resource management; production management; and small business management.

The student is aided in deciding upon his area of concentration by use of the department's Program of Study Manual. The student will work out the details of his program with his adviser from the offerings of the department and such other courses as may seem appropriate for the student's special needs.

Students may with permission of the department take Management 340 (Business Practice).

Management Sciences (MS)

Coordinator: Davis

Management Sciences (MS) represents the application of computers, mathematical methods, and statistics within a business environment as an aid to managerial decision-making. Increasing use of management sciences to assist managerial decision-making has occurred because mathematical models and statistical techniques have been developed that realistically "model" organizational activities. Examples are prevalent in all functional areas of business. For example, mathematical models have been developed for inventory control (Production Management), media allocation and market segmentation (Marketing), personnel assignment (Personnel Management), portfolio analysis (Finance), agency valuation and risk analysis (Insurance), and accounts receivable and cash flow management (Accounting).

Since quantitative tools and approaches to problem solving are meaningful only if an individual has a sound comprehension of the areas in which the tools can be applied, each Management Sciences major will be expected to take a number of courses in the functional areas of business (e.g., finance, marketing, management, accounting). The key objective of the major thus is to provide a well-rounded undergraduate program in business with an introduction to the basic methodologies of the management sciences.

An additional objective of the MS undergraduate program is to prepare students to pursue specialized work in management sciences after graduation, either through continuing education while on the job or through graduate work.

Course Requirements:

All management sciences majors are required to take at least one course in each of the areas of computer programming, operations research, simulation, and applied statistics. The following courses are suggested:

	HOURS
Statistics 500 (Programming for Electronic Digital Computers)	5
Management Sciences 500 (Survey of Operations Research)	5
Management Sciences 505 (Introductory Business Systems Simulation)	5
Management Sciences 552 (Applied Regression Analysis)	5

The remaining ten hours of course work in the major can be selected from among the following (assuming that the course prerequisites have been met):

	HOURS
Mathematics	
Mathematics 256 (Introductory Linear Algebra)	5
Mathematics 358 (Introduction to Differential Equations)	5
Mathematics 403 (Numerical Analysis I)	5
Computer Science	
Statistics 503 (Commercial Data Processing)	5
Statistics	
Statistics 422 (Statistical Methods II)	5
Management Sciences 512 (Sampling Methodology for Business)	5
Management Sciences 532 (Business Forecasting Methods)	5
Management Information Systems	
Management 550 (Systems Analysis and Design)	5
Production	
Management 553 (Production Planning and Quality Control)	5

Marketing (MKT)

Head: Reynolds

Marketing is concerned with developing and selling the vast assortment of products needed to satisfy the diverse wants and wishes of consumers. It is an indispensable part of business practice and a challenging field for study and research.

The purpose of the major in marketing is to give students a basic understanding of marketing and its role in society. The marketing curriculum is future oriented—emphasizing the skills needed for successful and responsible careers in advertising, retailing, sales management, wholesaling, research, physical distribution, product management, and related areas. The curriculum is designed to develop the broad background of knowledge required for continuing professional growth in a changing world that is constantly demanding better trained people for executive positions.

All marketing students are required to take a core of courses devoted to the development of analytical skills. These required courses draw upon both the behavioral and quantitative sciences and are designed to help students gain an understanding of the analytical methods and research procedures used in identifying and solving marketing problems.

Required courses for all marketing students:

	HOURS
Marketing 465 (Marketing Research)	5
Marketing 475 (Marketing Decision Making Techniques)	5
Marketing 561 (Behavioral Theory and Marketing[1])	5

After completing the required courses, each student majoring in marketing chooses an area of specialization for concentrated study depending upon his particular interests and career objectives. The courses in each optional area provide broad coverage of the subject matter, but at the same time, enable students to develop some depth of knowledge within an area of interests.

This part of the instructional program emphasizes problem solving, decision making and communications. The courses in each optional area offer opportunities for students to apply analytical techniques in solving practical marketing problems. These courses are intended to give students sufficient depth of knowledge to recognize and search for answers to problems and to apply the solutions that are derived. Electronic computers are used wherever possible for analytical assignments.There are four optional areas of specialization from which students may choose:

Marketing Management Option (Select three courses)

Marketing 564 (Sales Management)	5
Marketing 569 (Physical Distribution)	5
Marketing 558 (International Marketing)	5
Marketing 571 (Marketing Strategy)	5
Marketing 590 (Location Decision in Marketing)	5

Marketing Communications Option (Select three courses)

Marketing 563 (Advertising)	5
Marketing 567 (Marketing Promotion: Personal and Non-personal Selling)	5
Marketing 564 (Sales Management)	
Marketing 584 (Measurement of Promotional Effectiveness)	5
Marketing 571 (Marketing Strategy)	5

Retailing Option (Select three courses)

Marketing 560 (Principles of Retailing)	5
Marketing 565 (Retail Administration and Policy)	5
Marketing 567 (Marketing Promotion: Personal and Non-personal Selling)	5
Marketing 569 (Physical Distribution)	5
Marketing 590 (Location Decisions in Marketing)	5

Transportation and Physical Distribution Option (Select three courses)

Marketing 569 (Physical Distribution)	5
Marketing 568 (Motor Transportation)	5
Marketing 580 (Current Transportation Problems)	5
Marketing 558 (International Marketing)	5
Marketing 463 (Geography of Transportation)	5

Advanced marketing students, within 55 hours of graduation, may obtain practical experience and enrich their educational program by enrolling in Marketing 340, Business Practice. Up to 10 hours of elective credit may be earned for this course.

Organization Management*

Adviser: Smith

The work of organization management lies in the mobilization and coordination of volunteer community efforts by participating business firms and related interested agencies. This curriculum is aimed at preparing young men and women for careers in the wide array of activities associated with chambers of commerce and trade associations. This rapidly growing field requires imaginative and creative business leadership, political sensitivity, and basic grounding in the processes of economic development. The broad curriculum designated below is designed to provide the tools that the educator in the field of organization management must understand and use.

Major courses (30 quarter hours) will be selected from among the following:

Business Administration

Data Processing (exact course to be determined)
Management 540 (Business and Society)
Management 585 (Personnel Management)
Management 595 (Administrative Practices)
Management 596 (Organizational Communications)
Management 598 (Research in Administration)
Marketing 567 (Marketing Promotion)

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[1] *Students selecting the Transportation and Physical Distribution option should substitute MKT 559, Principles of Transportation, for MKT 561, Behavioral Theory and Marketing.*

Economics

Economics 410 (Economic Growth and Development)
Economics 436 (Business Fluctuations)
Economics 444 (Private Enterprise and Public Policy)
Economics 489 (The Labor Movement)
Economics 490 (Labor Legislation)
Economics 491 (Collective Bargaining)

Senior division electives of 10 quarter hours will be selected from among the following courses:

Political Science

Political Science 406 (State Government)
Political Science 413 (Government and Interest Groups)
Political Science 468 (City and County Government)

Sociology

Sociology 380 (Industrial Sociology)
Sociology 409 (Social Change)
Sociology 435 (Community Organization)

Psychology

Psychology 371 (Applied Psychology)
Psychology 375 (Social Psychology)

Journalism

Journalism 308 (Advertising Layout)
Journalism 577 (Public Relations)

Speech

Speech 350 (Argumentation and Debate)

**Jointly offered with Economics Department.*

Real Estate and Urban Development (RE)

Head: Floyd

Real Estate and urban development deals with the efficient allocation of urban land resources. Accordingly, real estate majors are trained to work with private and public organizations; students study real estate financing institutions, real estate valuation principles and methods of organizing and administering urban land and capital. Real estate development covers both public and private policies directed to the rearrangement of space to meet community goals. Special importance is placed on locating and arranging for the optimum distribution of housing, retail and industrial land uses. The emphasis on resource allocation requires an applied knowledge of computer analysis of urban trends, real estate investment decisions and governmental intervention into real estate markets.

Required Courses:	HOURS
Real Estate 390 (Urban Land Principles)	5
Real Estate 508 (Principles of Valuation)	5
Real Estate 512 (Urban and Regional Development)	5
Real Estate 510 (Real Estate Finance)	5

Two additional courses must be selected from the following list:

Real Estate 391 (Real Estate Brokerage)	5
Real Estate 392 (Real Estate Management)	5
Real Estate 509 (Income Property Valuation)	5
Real Estate 520 (Housing Markets)	5
Statistics 500 (Programming for Electronic Digital Computers)	5

Students are also encouraged to take RE 340 (Business Practice, 5–15 hours) during the summer between their junior and senior years. This course is available for elective credit only.

Risk Management Insurance and Management Sciences (INS)

Head: Leverett

The risk management and insurance major is designed to give the student a broad understanding of the place and functions of risk-bearing institutions in a private economy, the opportunity for professional advancement in the risk management and insurance field, and to give the future business executive some basic principles to guide him in establishing adequate risk-bearing programs. Insurance has assumed the status of a profession, and the insurance program of study is designed to enable one to achieve professional competency as well as to become a more intelligent purchaser of insurance.

The risk management and insurance major can be made more meaningful by supplementing the course work with parallel work experience. Superior students within 55 hours of graduation are encouraged to take Insurance 340 (Business Practice) for elective credit. Students interested in INS 340 should ask their adviser for further information.

All risk management and insurance majors are required to take the following courses:

Required courses for all majors in insurance:	HOURS
Insurance 381 (Principles of Risk and Insurance)	5
Insurance 385 (Casualty Insurance)	5
Insurance 513 (Business Risk Management)	5

There are three sequences of courses which a student may take depending upon his particular interests and professional career objectives. The following courses should be taken in addition to the two courses required of all majors. If INS 381 has been taken as an Environmental Elective the student will need to select a total of five courses.

Life and Health Sequence

Insurance 387 (Life Insurance)	5
Insurance 505 (Insurance Planning and Programming)	5
Insurance 506 (Social Insurance)	5
Insurance 511 (Employee Benefits)	5

Property-Liability Sequence

Insurance 388 (Property Insurance)	5
Insurance 502 (Casualty Insurance Problems)	5
Insurance 503 (Property Insurance Problems)	5
Insurance 507 (Insurance Agency Management)	5

Risk Management Sequence

Insurance 387 (Life Insurance)	5
Insurance 388 (Property Insurance)	5

Plus two of the following:

Insurance 502 (Casualty Insurance Problems)	5
Insurance 503 (Property Insurance Problems)	5
Insurance 511 (Employee Benefits)	5

COMBINED MAJOR PROGRAM

Business Administration/ Industrial Geography

Adviser: Barrow

In cooperation with the College of Arts and Sciences, the College of Business Administration offers a major in industrial geography which trains students in the fundamentals of economics, geography, and allied fields upon which the expanding field of area planning is based. Its purpose is to provide the background requisite for careers with city, county, metropolitan and regional planning commissions; private consultative planning and real property development firms; industries concerned with urban-industrial developmental problems—such as railroads; market analysis consultants; and commercial and governmental mapping agencies. This curriculum also provides a superior basis for graduate work in area planning or economic geography.

Freshman and Sophomore Years

	HOURS
Requirements as outlined for the B.B.A. degree, with the exception that Geography 120–121–122 must be taken in the laboratory science category.	106

Junior and Senior Years

Finance 330	5
Management 351 and 320	9
Marketing 360	5
Environmental Electives (10 hours)	
Group A: ECN 133, 134, 386, 406, 436, 437, 448, 469, FIN 326, or 434.	5
Group B: ACC 370, 576, INS 381, 506, MAN 401, 540, MKT 558, 559, RE 390 or 512	5
Geography 350, 358, 459, 460 and 463	25
Three courses from the following group: Geography 410, 420, 436, 461, 466, (3 hrs.), or 468	13–15
Four courses from the following group: Economics 499, 495, Real Estate 390, 512 Marketing 465, 559, 568, or 580	20
Business Policy 599	5
	198–200

Bachelor of Arts (Economics)

When students who are working toward the Bachelor of Arts degree enter their junior year, they are required to elect a major division in which to concentrate and from which they must take at least eight courses. One of the major divisions that may be selected is the social sciences, and economics is one of the departments within this division. The economics concentration group is provided for A.B. students who desire to major in economics. From this group, the student's major program will be arranged, subject to the approval of the major professor and the dean of the College of Arts and Sciences.

SPECIAL SERVICES AND INSTITUTES

Division of Services

Acting Director: Jack T. Davis

The division carries out its service objectives through a basic data accumulation and dissemination program, through a regional economic analysis program, through a consultation service provided by its staff members, and through a contract research program involving division staff and college faculty members and graduate students.

The area of service involves the college directly with industrial groups, businesses, governmental units and other communities of interest throughout the state, region, and the nation. A primary goal of the college in the area of service is to enhance the total development of the economy of Georgia. Working toward this goal, the division is responsible for a diversified service program consisting of seminars, workshops, and consultations which are aimed primarily at various economic units throughout the state.

To accomplish the college's extensive service program, the division relies on the various academic departments of the college to carry out individual and collective service programs. The staff of the division relate functionally to each department and assist the faculty in designing and implementing the department's service programs.

All of the departments in the college offer service programs to the people of the state. A sample listing of these programs includes:

1 Executive Development Program
2. Management Development Programs
3. Associate Credit Bureaus—Southern Executive Development Program
4. C.P.A. Review Course
5. Income Tax Clinic
6. Insurance Marketing—Blue Cross-Blue Shield
7. Executive Development Program for Savings and Loan Executives
8. Georgia Banking School
9. Institute for Organization Management (U.S. Chamber of Commerce)
10. New State License Examination Procedure (State Real Estate Commissioners)
11. Southeastern Credit Union School
12. Downtown Revitalization Programs

Division of Research

Director: Al Niemi

The division strives to stimulate, encourage, and support business and economic research by faculty and graduate students in the college and to serve business, communities, and areas of the state by bringing the resources of the college to bear on economic growth and development problems in Georgia and the Southeast.

The division carries out its research objectives by providing a current collection of business and economic reference materials, by helping faculty members develop proposals and obtain grants, and providing editorial, and administrative support to faculty conducting business and economic research. In addition, by using graduate assistants in its research projects, the division provides a training program in research techniques.

The division publishes a bi-monthly magazine, Georgia Business; a series of faculty research papers, and monographs; the Georgia Statistical Abstract; a series of monographs on the Georgia economy and a series of travel research studies.

The division is a member of the Association for University Business and Economic Research.

University Business Development Center

Director: Larry Bramblett

The University Business Development Center (UBDC) represents a partnership among the University, government, and the private sector. The purpose of the UBDC is to provide assistance in financial matters, government policies, and managerial and marketing decisions to the more than 80,000 firms which make up Georgia's small business community. This goal is accomplished through programs of consultation, business and economic information, residential instruction, and continuing education.

THE COLLEGE OF EDUCATION

ADMINISTRATIVE OFFICERS

Joseph Anderson Williams, A.B., M.S. M.Ed., Ed.D., *Dean*

Doyne Muncy Smith, B.S., M.S., Ed.D., *Associate Dean for Services*

Reese Wells, B.S., M.S., Ed.D., *Assistant to the Dean*

GENERAL INFORMATION

Purpose and Organization

The College of Education is the division of The University of Georgia that provides and administers all professional programs and courses designed for the preparation of teachers and other education-related positions. In its role of educational leadership, the College recruits and selects prospective educational workers, provides pre-service and in-service training programs, conducts research to solve educational problems, and offers field service to all types and levels of educational institutions. The University is accredited by the National Council for the Accreditation of Teacher Education.

Facilities

The College of Education utilizes extensively the facilities of the University, the community, and the schools. Administrative offices are located in the Aderhold Building. In addition, the following buildings are primarily used for College of Education programs: Dudley, Fain, Industrial Arts, Mental Retardation Center, the Physical Education building, Stegeman, and Tucker Hall.

Degrees Offered

The College of Education prepares its students for the undergraduate degree of Bachelor of Science in Education. By coordinating programs with other appropriate colleges and schools, the College also prepares students for educational specialities within the undergraduate degrees of Bachelor of Science in Agriculture, Bachelor of Fine Arts, Bachelor of Science in Home Economics, and Bachelor of Music.

Through the Graduate School of the University the following degrees are offered: Master of Education, Master of Arts in Education, Master of Art Education, Master of Music Education, Educational Specialist, Doctor of Education, and Doctor of Philosophy. See the Graduate School Bulletin for further information or write to the College of Education, director of graduate studies.

Organization of Undergraduate Programs

Undergraduate programs at The University of Georgia prepare teachers and other educational workers in the following fields:

- Early Childhood (nursery, kindergarten, grades 1–3)
- Elementary (grades 1–7)
- Middle Grades (5–8)
- Secondary (grades 7–12) in agriculture, business education, distributive education, home economics, industrial arts, and the six academic areas of English, mathematics, foreign language, science, social studies, and speech.
- Grades 1–12 in art, music, foreign language, physical education, health education,

health occupations education, speech correction, speech pathology and audiology, and mental retardation.

Majors are also offered in recreation and in dance.

School librarian can be added to one of the above teaching areas.

The entire resources of the University are used in the education of teachers.

The College of Education administers all courses in professional education and provides teaching fields in industrial arts, health education, physical education, recreation, safety education, library education, and in special education. Other courses in teacher preparation programs are taught by other divisions of the University.

Although specific course requirements vary with the teaching field, each undergraduate program includes the following elements:

(1) general education, a sequence of courses from a variety of fields, taken primarily in the College of Arts and Sciences in the freshman and sophomore years;
(2) the teaching field or major, consisting of courses designed for the specific subject or grade level of prospective teaching, offered in the College of Agriculture, College of Arts and Sciences, College of Business Administration, College of Education, and School of Home Economics;
(3) work in professional education, in the College of Education.

Matriculation

Most students who prepare for teaching matriculate in the College of Education and pursue one of the programs leading to the degree Bachelor of Science in Education. Students matriculate in other colleges for specialized degrees with educational applications.

Students enrolled in other colleges of the University who seek certification as a teacher should apply for admission to Teacher Education, have their individual programs approved by the College of Education by the beginning of the junior year, and must meet all requirements of the approved professional programs.

A distinction is made between matriculation in a division of the University offering teacher education programs and formal admission to a program in teacher education, as described in "Admission to Teacher Education."

Honors Program

Qualified students are encouraged to participate in both the junior and senior division honors programs described elsewhere in this bulletin.

Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as stated in the general information section of this bulletin.

Hours and Residency

A minimum of 190 quarter hours, exclusive of PE and ROTC, is required for a Bachelor of Science in Education degree. A minimum of 90 quarter hours must be taken in residence at the University.

Grades

A candidate for the Bachelor of Science in Education degree must have an average of 2.0 in all work attempted and may not have grades below 2.0 in more than 45 quarter hours. In addition, he may not count for degree purposes any grade of less than 2.0 in the prescribed education and teaching field courses.

Academic Advisement

The Student Personnel Services Office of the College provides initial advisement for freshmen and transfer students. Following this initial advisement period, students are assigned to an adviser in their teaching field. Students confer with their advisers at least once per quarter to plan programs and pre-register.

Students who need additional counseling may obtain assistance from the student services office.

Admission, Retention, and Exit Policies

Enrollment in the College of Education does not constitute admission as a candidate for a professional degree in education. At the completion of 75 quarter hours credit, each student who seeks a professional teaching degree or professional teacher certification must apply for "Admission to Teacher Education" through the Student Personnel Services Office, 122 Aderhold. At this stage the student must have a cumulative grade point average of 2.2, have completed satisfactorily ENG 101, 102 and EFN 303 or EPH 380, and must pass a speech and hearing test.

Enrollment in the curriculum and/or methods courses of the various teaching fields is subject to the approval of the program area concerned. In addition to the above requirements, some program areas require a higher cumulative grade point average and the completion of specified courses in the teaching field.

The following are the prerequisites for receiving a student teaching assignment: Student must make application at the DPL office, G-4 Aderhold three quarters in advance; must be "Admitted to Teacher Education"; have at least a 2.2 cumulative grade point average; have completed essentially all required courses in the teaching field with a grade of at least "C" in each; have completed the prerequisite education courses with a grade of at least "C" in each (courses in curriculum and teaching procedures must have been taken on this campus); completion of the school practicum (required in most programs); and be in satisfactory personal health to assume responsibility in student teaching. A student is not permitted to student teach while on probation. Some program areas have requirements exceeding the above.

The National Teachers Examinations—commons and teaching field option are required by the Board of Regents as exit examinations for all persons completing teacher preparation programs.

SPECIAL SERVICES

Speech and Hearing Clinic

The speech pathology area is concerned with training of teachers and the conducting of research in speech. The Speech and Hearing Clinic extends its diagnostic and treatment services to all children and adults who have functional or organic problems of oral communication. Particular attention is given to assisting University students. Arrangements for these services are made through the chairman of speech pathology.

Special Education Clinic

The Special Education Clinic functions as a training laboratory for prospective teachers of children who are mentally retarded, physically handicapped, or emotionally disturbed. Detailed evaluation of educational and learning needs is followed by individual and small group therapeutic teaching. Children are accepted in the clinic as needed for training purposes. Arrangements may be made through the chairman, Program for Exceptional Children.

Reading Clinic

The Reading Clinic is concerned with the education of teachers of reading and the conduct of research in reading. This clinic offers both diagnostic and corrective service to elementary and high school pupils.

Student Development Laboratory

The Student Development Laboratory provides counseling and other developmental personal growth experiences for all college-age students. Experiences include academic success training (study skills), human relations skill building, dealing with test anxiety, leadership training, improving creative thinking, asserting oneself positively, and personal decision making skill building. In addition, individual and group counseling opportunities are available. The program is coordinated and implemented by faculty and advanced graduate students in the Department of Counseling and Human Development Services. The Student Development Laboratory is located in 420 Aderhold. Phone 542–1812, Extension 33.

CLINICAL AND FIELD EXPERIENCES

Supervised observation-participation and student teaching in cooperating laboratory schools are required of candidates for a degree leading to professional certification. Students should anticipate that additional expenses will be incurred in completing required field experiences.

Student teaching involves instruction in curriculum and in general and specific methods under the direction of selected cooperating supervising teachers. High school student teachers usually teach in one teaching field; middle grades, in one or two teaching fields; elementary, by grade; and early childhood in a primary grade and a kindergarten or nursery school.

Student teaching carries 15 hours credit. No correspondence or extra course work or part-time jobs are permitted during student teaching.

Students in programs in early childhood, elementary, junior high and most of the general secondary fields participate in a school practicum during the sophomore and/or junior year prior to student teaching. As a usual practice the student spends two weeks in a public school during late August and early September prior to the beginning of the Fall Quarter at the University. This familiarizes the student with problems of teaching, organization, management at the beginning of a regular school year. As a follow-up to the school practicum, students enroll in a seminar during the fall quarter, for which they register for E( ) 345, (by teaching field) and for which they may receive one hour credit. A student may be permitted to participate in more than one school practicum. The student should see his departmental advisor concerning this requirement.

BACHELOR OF SCIENCE IN EDUCATION DEGREE REQUIREMENTS

Undergraduate teacher-education programs are approved by the State Board of Education and the National Council for the Accreditation of Teacher Education. A person completing any one of these programs may be recommended for certification in Georgia as well as in most other states.

The programs outlined lead to the degree of Bachelor of Science in Education with a major in the field specified except in agriculture, home economics, and music.

Although the University requires a minimum of 180 quarter hours for graduation, the B.S. Ed. programs typically include 196 qtr. hrs. or more.

Core Curriculum

For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*, page 24.

Generally, the following core curriculum is accepted by all departments within the College of Education. There may be slight variations in each program.

	HOURS	
AREA I HUMANITIES		20
English 101, 102	10	
Comparative Literature 121, 122 (other literature courses are accepted)	10	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Mathematics 100 (other mathematics courses are accepted)	5	
Laboratory Science: Biology 101, 102; Chemistry 111, 112, 121, 122; Geology 125, 126; Physics 127, 128	10	
Science elective: Physical Science 101; Geography 104, 120, 121; Philosophy 258	5	
AREA III SOCIAL SCIENCE		20
Political Science 101	5	
History 111, 112, or 251, 252	10	
Social Science elective	5	
AREA IV COURSES RELATED TO MAJOR		30
Introduction to Education 303	5	
Psychology 101	5	
Fine Arts 300 or other art/music/crafts	5	
Speech 108	5	
Electives in teaching field	10	

Art Education

Area Chairman: Nix

B.S. Ed. in Art Education

	HOURS	
AREA I HUMANITIES		20
English 101, 102	10	
Literature	10	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Math 100 or Philosophy 258	5	
Biology 101, 102 or Botany 121, 122	10	
Physical Science	5	
AREA III SOCIAL SCIENCE		20
History 111–399	10	
Political Science 101	5	
Social Science Electives	5	
AREA IV COURSES RELATED TO MAJOR		30
Art 120, 130, 230, 240	20	
EFN 303	5	
EAR 400 or EXC 500	5	
MAJOR		50
Art History (Art 287, 288)	10	
Art History (Senior division)	10	
Art Studio (2 Dimensional)	10	
Art Studio (3 Dimensional)	10	
Art Studio Electives	10	
PROFESSIONAL EDUCATION		30
EPY 304	5	
Curriculum & methods (EAR 335, 336)	10	
Student Teaching (EAR 546, 547, 548)	15	
ELECTIVES		20
OTHER		9
PED	5	
HED 171	3	
	TOTAL	198

Early Childhood Education (Nursery, Kindergarten, Grades 1–3)

Chairman: Cooper
This program leads to a certificate to teach in nursery, kindergarten, and the primary school through grade three. (As of 1978–79 school year, the Elementary and Early Childhood Programs will be combined for certification K–4.)

Freshman and Sophomore Years

	HOURS
English 101, 102	10
History 251 or 252	5
Political Science 101	5
Biological Science[1]	10
Physical Science[1]	5
Mathematics 205	5
Mathematics 206	5
Psychology 101	5
Physical Education	5
Humanities Electives	10
Social Science Electives	10
Teaching Field Electives	5

Junior and Senior Requirements

Early Childhood Practicum 302	2–6
Educational Foundations 303	5
Child and Family Development/Psychology 395	5
Art 305	5
Music 303	3
Music 305	3
Health Education 344	3
English Education 442	3
Educational Media 401	3
Early Childhood 333	5
Early Childhood/Child and Family Development 343	3
Early Childhood 344	3
Physical Education 442	5
Educational Psychology 304	5
Child and Family Development 591	5
Child and Family Development 496	5
Child and Family Development 210 or 393	5
Exceptional Children 500	5
Reading Education 442	5
Mathematics 442	3
Science 442	3
Social Science 442	3
Early Childhood 546, 547, 548	15
Child and Family Development 598, 599	10

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[1] *A minimum of 15 hours in science is required as a part of general education. Selections should include 10 hours in biological science in sequence and 5 hours in physical science.*

Elementary Education

Chairman: Cooper
This program leads to a certificate to teach in the elementary schools from grade one through seven. (As of 1978–79 school year, the Elementary and Early Childhood programs will be combined for certification K–4.)

Freshman and Sophomore Years
(General Education)

	HOURS
English 101, 102	10
Social Science Electives	15
Biological Science[1]	10
Mathematics 205	5
Mathematics 206	5
Political Science 101	5
Fine Arts 300	5
Comparative Literature 121, 122	10
Speech 108	5
Geography 101 or 102	5
History 251 or 252	5
Physical Science[1]	10
Teaching field electives	15
Physical Education	5

Junior and Senior Requirements
(Professional Education)

Field Experience I (16 hours required)	
Introduction to Education 303	5
Health Education 344	3
Educational Psychology 201	3
Reading Education 401	5
Field Experience II (18 hours required)	
Elementary Curriculum 333	1–5
Reading Education 402	5
Physical Education 307	5
Mathematics Education 337	3
Field Experience III (14 hours required)	
Curriculum and Testing 334	1–5
English Education 338	3
Science Education 339	3
Social Science Education 340	3
Field Experience IV (15 hours required)	
Elementary Education 546, 547, 548 (Student Teaching)[2]	15
Other Requirements	
Educational Media 401	3
Art 305	5
English Education 300	3
Music 303	3
Music 304	3
Educational Psychology 304	5
Elementary Practicum 345	1
Exceptional Children 500	5

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[1] *A minimum of 20 hours in science is required as a part of general education. Selections should include 10*

hours in biological science and 10 hours in physical science. A minimum of 10 hours must be in laboratory science courses.

[2] Students enrolled in undergraduate programs in Elementary, Early Childhood, and Middle School Education are required to do their student teaching in an approved student teaching situation under direct supervision of staff from the Division of Elementary Education, College of Education, University of Georgia.

Middle School Education

Chairman: Cooper

This program is particularly suited for prospective teachers of upper elementary, middle, and junior high school levels and leads to certification 4–8. Students select two areas of teaching specialization. Specific course requirements for teaching fields are listed by departments.

Freshman and Sophomore Years
(General Education)

	HOURS
Humanities	25
Social Science	20
Science	20
Mathematics	10
Physical Education	5
Electives	15

Junior and Senior Requirements
(Professional Education)

Teaching Areas The middle school program is field-centered. Four quarters of laboratory experiences in middle schools are provided. Areas of emphasis during the professional quarters include:	55
Professional Phase I Introduction to Education Nature of the Middle School Learner Instructional Methods (Area I) Middle School Program Educational Media	10
Professional Phase II Psychology of Learning Personal Counseling Instructional Methods (Area II) Communication Skills Middle School Programs Educational Media	10
Professional Phase III Instructional Methods (Area I) Instructional Methods (Area II) Diagnostic Teaching Strategies Problems of Middle School Teaching Educational Media	10
Professional Phase IV Student Teaching	15

Library Education for the Elementary School Teacher

Head: Ormston

Library education courses are open to elementary as well as secondary school teachers. By taking 20 quarter hours in library education, the student may satisfy the requirements for certification as an associate library media specialist. With approval of the faculty adviser, these courses may be included among electives in the junior and senior years. Additional library education courses carry graduate credit and, subject to approval of faculty advisers, may be included in programs leading to graduate degrees.

Health, Physical Education, Recreation, Safety Education, and Dance

Chairman: Jewett

Concentration Areas

A student will receive some preparation in each of the fields of health education, physical education and recreation. A program of study in one of the areas should be planned and approved at the beginning of the junior year or earlier. Students can be certified in health and physical education and may receive certification and/or endorsement in safety education.

I. Physical Education

Freshman and Sophomore Years

	HOURS
Biology 101–102	10
English 101–102	10
Electives in general Education[1]	15
Introduction to Education 303, or Educational Philosophy 380	5
Physical Education 180, 181, 182, 183, 184, 185, 186, 187, 188, 189	6–9
Physical Education 171–176	6
Health Education 119, 171, 309	6
Recreation 118, or 384	3
Fine Arts 300, or Art 300, or MUS 300, or Drama 300	5
Comparative Literature 121, 122, English 131, or 132	5
Speech 108	5
Physical Education 211	3

Physical Education 280, 281, 282, 283	9
Chemistry 111, Physics 101, or Physical Science 101	5
Mathematics 100	5
History 251–252	10

Junior and Senior Requirements

Zoology 212, 213	10
Educational Psychology 304	5
Educational Media 401	3
Physical Education 546, 547, 548	15
Physical Education 215, 379, 380, 381, 382	9
Physical Education 307, 336, 360, 361, 372, 383, 345 (1–3 hours)	29–31
Health Education 335	5
Electives	15–22

II. Health Education

Freshman and Sophomore Years

	HOURS
English 101–102	10
Speech 108	5
Literature Elective	5
Biology 101–102	10
Zoology 212–213	10
Math 100	5
Chemistry 111 or 112	5
Microbiology 350 or 352	5
History 104	5
Political Science 101	5
Social Science Electives	15
Physical Education	5
Health Education 119	3
Health Education 171B	5
Health Education 301	2

School Health Education Option

General Education Requirements	33
Health Education 511	5
Foods and Nutrition 210 or 500	5
Health Education 506	5
Health Education 404	3
Health Education 521	5
Psychology 459	5
Health Education 519 or Biology 350	2–5
Health Education 335	3
Health Education 336	3
Health Education 345, 346, 347	1–3
Health Education 546, 547, 548	15
Health Education 512	5

Community Health Option

General Education Requirements	45
Foods and Nutrition 210 or 500	5
Health Education 404	5
Health Education 405	3
Health Education 523	3
Health Education 513	5
Health Education 522	5
Health Education 519	2
Health Education 556	10
Health Education 512	5

III. Safety Education

Freshman and Sophomore Years

	HOURS
English 101–102	10
Speech 108	5
Literature Elective	5
Biology 101–102	10
Zoology 212–213	10
Math 100	5
Chemistry 111 or 112	5
Microbiology 350 or 352	5
History 104	5
Political Science 101	5
Social Science Electives	15
Physical Education	5
Health Education 119	3
Health Education 171B	5
Health Education 301	2

General Safety Option

General Education Requirements	35
Safety Education 445	5
Safety Education 544	5
Safety Education 579	5
Safety Education 576	5
Safety Education 577	5
Safety Education 590	5
Health Education 335	3
Health Education 336	3
Safety Education 556	10
Health Education 519 or 521	2–5

An Endorsement in Safety, Driver and Traffic Education is also available.

I. Recreation and Leisure Studies

Freshman and Sophomore Years

	HOURS
Biology 101–102	10
English 101–102	10
Electives in general Education[1]	15
Physical Education 180, 181, 182, 183, 184, 185, 186, 187, 188, 189	6–9
Physical Education 171–176	6
Health Education 119, 309	3
Recreation 118	3

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[1] Select three courses during the freshman and sophomore years from the following: Political Science 101, Sociology 105, Psychology 101, Philosophy 104, Anthropology 102, Geography 101 or 102, or a substitute approved by the major professor.

Comparative Literature 121, 122, English 131, or 132	5
Speech 108	5
Physical Education 211	3
Physical Education 280, 281, 282, 283	9
Chemistry 111, Physics 101, or Physical Science 101	5
Mathematics 100	5
History 251–252	10

Junior and Senior Requirements

All recreation majors will elect an option sequence of primary interest. Courses within the option will be selected by consultation with the major advisor.

Music, Arts, Drama, Industrial Arts	15
Sociology	5
Health Education 370	5
Recreation 345	5
Recreation 203, 546, 547, 548, 385, 386, 387, 389	30
Journalism 592	5
Physical Education 307	5
Education 304	5
Option sequence and electives	38

A. Public Recreation and Park Management
B. Camping and Outdoor Recreation
C. Therapeutic Recreation
D. Voluntary Youth Service Agencies
E. Community-School Recreation

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II. Dance Education
This program of studies has been designed to enable the dance student to develop technical proficiency and choreographic ability, to gain experience in production, performance, and teaching; to explore the scientific, philosophic, and historic foundations of dance; to consider the relationship of dance to other art forms and to related areas of study; to understand the function of dance as an educational tool and to become familiar with current research, problems and issues in dance education; and to experience dance as a total theater experience. Opportunities are provided for guided teaching experiences and individual study.

Freshman and Sophomore Years[1]

	HOURS
English 101–102	10
History 111 or 112	5
History 251 or 252	5
Political Science 101	5
Mathematics 100	5
Anthropology 102	5
Biology 101–102	10
Psychology 101	5
Speech 108	5
English 131–132	10
Zoology 212	5
Philosophy 104, 115H	5
Educational Psychology 304	3
Music 244, 246	3
Drama 250	5
Dance 281	3
Dance Education 252	2
Dance Education 258	3
Dance Education 265ABC	6
Dance Education 266ABC	6
Physical Education 211	3
Physical Education	5

Junior and Senior Requirements

Dance 257, 253, 352, 354A, B	16
Physical Education 360	5
Fine Arts 300	5
Drama 222, 240, 300	5
Drama 333, 334	10
Art 287, 288	5
Approved electives	15–20
Philosophy 411 or substitute	5
Drama 592, 594	5
Dance 365, A, B, C, D, 450, 451, 455	21
Dance Education 153A–F	6
Dance Education 351	3
Dance Education 465ABC	6
Dance Education 466ABC	6
Approved electives	15–20

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[1] *Satisfactory participation in the Concert Dance Group (the performing group) for a minimum of two years is required of all dance majors.*

Music Education

Chairman: Parker
This program leads to the degree Bachelor of Music (See Music, College of Arts and Sciences).

GENERAL SECONDARY TEACHERS PROGRAM

The programs in general secondary education are designed for prospective teachers of English, foreign languages (French, German, Latin, Spanish), mathematics, sciences (biology, chemistry, earth science, general science, physics), social sciences (economics, geography, history, political science, sociology), and speech in grades seven through twelve. Programs for prospective teachers in grades 7, 8, and 9 in the fields of English, mathematics, general science, and social science are included. The programs are described on the following pages under these departmental headings: (1) English education, (2) foreign language education, (3) mathematics education, (4) science education, (5) social science education, and (6) speech education. Requirements and prerequisites in the teaching field should be considered in choosing courses in the freshman and sophomore years. Each prospective teacher should select a teaching field and plan his program with his advisor in the appropriate department of the College of Education. Completion of a program qualifies a student for a professional four-year teacher's certificate in a field in either grades seven through twelve or grades seven through nine.

English Education

Head: O'Donnell

The program qualifies a student for a professional four-year certificate in Georgia to teach English in grades 7–12.

Freshman and Sophomore Years
(Core Program)

	HOURS
ENG 101–102[1]	10
ENG 131–132 or CML 121–122[1]	10
Mathematics[2]	5
Laboratory Science[3]	10
Math/Science Elective[4]	5
Social Sciences[5]	20
EFN 303S	5
EXC 500	5
Fine Arts[6]	5
SPC 108	5
Foreign Language or Cross-Cultural Courses[7]	10
Physical Education	5
TOTAL	95

Junior and Senior Years[8]

Teaching Field:

	HOURS
ENG 413, History of the English Language	5
EEN 507, Language Studies	5
British Literature (pre-1900)	5
American Literature (pre-1900)	5
20th Century Literature	5
EEN 506, Literature Study	5
EEN 509, Composition	5
Electives	15
TOTAL	50

Professional Education:[9]

EPY 304, Learning and Motivation	5
ERD 403, Reading in Secondary Schools	5
EEN 335, English Curriculum	5
EEN 336, Teaching Procedures: English	5
EEN 546, 547, Student Teaching	10
TOTAL	30

Other Courses:

HED 171, Health Problems	3
ECP 400, Human Relations Training[10]	2
Foreign Language or Cross-Cultural Courses[11]	5
Electives	9
TOTAL	19

Foreign Language Education (Secondary)

Head: O'Donnell

This program qualifies a student for a professional four-year certificate in Georgia to teach a foreign language in secondary schools.

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[1] *If the student exempts any of these by examination, but without credit, he should choose a substitute from English, foreign language, speech, drama, art or music.*

[2] *MAT 100, 101, 115H, or STA 200.*

[3] *BIO 101–102, CHM 111–112 or 121–122, GGY 121–122, GLY 125–126 or PCS 127–128.*

[4] *GGY 104, GGY 120, AST 291, PHY 258, PCS 101, or any course listed in 2 or 3.*

[5] *ANT 102, ECN 105, GGY 101, GGY 102, HIS 111, 112, 251, 252, POL 101, PSY 101, SOC 105.*

[6] *ART 300, DRA 300, EIA 332, FA 300, MUS 300.*

[7] *Fifteen hours of work in either a foreign language or cross-cultural understanding will be divided between the core program and "Other Courses."*

[8] *All students who desire a teaching certificate in English must request an advisor in the Department of Language Education.*

[9] *This thirty-hour sequence will be taken during a two-quarter assignment to a public school field center. This sequence may be taken only by application, which must be made no less than one month prior to registering (early or regular) for the first of these two quarters. No other work may be undertaken during these two quarters.*

[10] *Required only if such training is not part of another course, such as EFN 303S.*

[11] *Fifteen hours of work in either a foreign language or cross-cultural understanding will be divided between the core program and "Other Courses."*

Freshman and Sophomore years
(Core Program)

	HOURS
ENG 101–102[1]	10
Literature[2]	10
Mathematics[3]	5
Science sequence[4]	10
Math/Science Elective[5]	5
ANT 102	5
HIST	5
Social Science Electives[6]	10
EFN 303S	5
EXC 500	5
Fine Arts[7]	5
SPC 108	5
Teaching Field Electives[8]	10
PED	5
TOTAL	95

Junior and Senior Years[9]

Teaching Field:	
Foreign literature, culture, and language (see specific courses listed below under appropriate language heading.)	45
Professional Education:	
EPY 304	5
EFL 335, Foreign Language Curriculum[10]	5
EFL 336, Teaching Procedures[10]	5
EFL 546, 7, 8	15
TOTAL	30
Other Courses:	
HED 171, Health Problems	3
EFL 505	5
Approved electives[8]	16
TOTAL	24

French

Literature—15 hours
- FR 201
- FR 202
- FR 433 or 434

Culture—5 hours
- FR 410, French Culture and Civilization

Language—25 hours
- FR 306, Advanced Conversation and Composition
- FR 503, Oral French
- FR 507, Applied Linguistics
- FR 556, Advanced Syntax and Composition
- FR 557, French Phonetics

German

Literature—10 hours
- GR 201
- GR 202

Culture—5 hours
- GR 420, German Culture

Language—10 hours
- GR 210, Conversation and Composition
- GR 410, Advanced Conversation and Composition
- Electives in German—20 hours

Latin
- LAT 201
- LAT 202
- LAT 203, Intermediate Latin
- LAT 304, Readings in Latin
- LAT 400, Advanced Reading Courses
- LAT 500H, Honors Courses in Latin
- Electives

Spanish

Literature—15 hours
- SP 201
- SP 202
- SP 205 or 206

Culture—5 hours
- SP 410, Spanish Culture and Civilization OR
- SP 411, Spanish American Culture and Civilization

Language—25 hours
- SP 306, Advanced Conversation and Composition
- SP 503, Oral Spanish
- SP 507, Applied Linguistics
- SP 526, Advanced Syntax and Composition
- SP 528, Spanish Phonetics

Foreign Language Education

[1] *If the student exempts either of these by examination, but without credit, he should choose a substitute from English, foreign language, speech, drama, art, or music.*

[2] *ENG 131–132, CML 121–122, CLC 120–121, FR/GR/SP 201–202.*

[3] *MAT 100, 101, 115H, or STA 200.*

[4] *BIO 101–102, CHM 111–112, or 121–122, GGY 121–122, GLY 125–126, or PCS 127–128.*

[5] *GGY 104, GGY 120, AST 291, PHY 258, PCS 101, or any course listed in 3 or 4.*

[6] *ECN 105, GGY 101 or 102, HIS 111, 112, POL 101, PSY 101, SOC 105.*

[7] *ART 300, DRA 300, EIA 332, FA 300, MUS 300.*

[8] *Electives should lead to a strong second area of concentration, e.g., a second foreign language.*

[9] *All students who desire a teaching certificate in a foreign language must request an advisor in the Department of Language Education.*

[10] *These courses may be taken only by application, which must be made no less than one month prior to registering (early or regular) for the first (335) of the two-quarter sequence.*

Mathematics Education

Head: Wilson

The programs lead to secondary mathematics certification in Georgia, grades 7–12. Students should consult an advisor in the Department of Mathematics Education as soon as possible in their program.

Freshman and Sophomore Years

	HOURS
English 101–102	10
English 131 or Comparative Literature 121	5
English 132 or Comparative Literature 122 or Speech 108	5
Mathematics 101 or Mathematics 116[1]	5
Mathematics 253, 254, and 255	15
Laboratory Science (2 course sequence):	10
Suggested Options: BIO 101–102, PCS 127–128, PCS 137–138, CHM 121–122, GLY 125–126, GGY 120–121	
Mathematics or Science elective:	5
Suggested Options: MAT 256, STA 200, STA 221, any laboratory science, STA 500, PHY 258	
History 111–112 or History 251–252	10
Political Science 101	5
Social Science Electives:	5
Suggested Options: SOC 105, ANT 102, PSY 101, GGY 101, ECN 105	
Educational Foundations 303 or Education Philosophy 380	5
Fine Arts elective:	5
Suggested options: FA 300, DRA 300, MUS 300, ART 300, EIA 332	
Health Education 171	3
Physical Education	5

Junior and Senior Years

All courses selected in the teaching field must be approved by the student's advisor.

Students must complete 9 upper division teaching field courses, including at least 2 courses in geometry, 3 courses in algebra (including at least 2 in sequence), and one course on computer usage.

Professional Education

	HOURS
Educational Psychology, EPY 304	5
Mathematics Curriculum, EMT 335	5
Teaching Secondary School Mathematics, EMT 336	5
School Practicum in Mathematics, EMT 345	1
Student Teaching of Mathematics, EMT 546–547–548	15
Post-Student Teaching Seminar, EMT 499	5
Introduction to Exceptional Children, EXC 500[2]	5

A minimum grade of C is required in each mathematics course and in each education course. Each student is responsible for maintaining contact with his mathematics education department advisor.

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[1] *Highly qualified students may begin their college mathematics with MAT 253. Approval of an advisor required.*

[2] *Required for certification in Georgia.*

Science Education

Head: Butts

Programs in science education lead to certification to teach a science area in the secondary school or in grades seven, eight, and nine Students should consult an adviser in the Department of Science Education as early as possible in their program. Course option, sequences, and prerequisites require different scheduling for each area of specialization.

Freshman and Sophomore Years

	HOURS
English 101 and 102	10
Political Science 101	5
Introduction to Education, EFN 303 or EPH 380	5
Mathematics 100–101 or 116	10
Chemistry 121 and 122	10
Chemistry 223 or 340	5
Physical Education	5
Comparative Literature 121 and 122 or Speech 108	10
History 111 and 112	10
Psychology 101	5
Mathematics 253 or 235 or Statistics 421	5
Physics 127 and 128	10
Biology 101 and 102	10

Junior and Senior Requirements

Science specialization (described below)	30–45
Fine Arts 300 (or approved option)	5
Educational Psychology 304	5
HED 171	3
School Practicum, ESC 345ABC	1–3
Secondary Science Methods, ESC 336	5
Student Teaching, ESC 546, 547, 548	10–28
Electives (hours depend upon specialization)	

Teaching Field Requirement
(with typical courses)

Biology specialization—45 hours	
Principles of Botany (BOT 203	5
Organic Chemistry (CHM 341)	5
Structure of Organisms (ZOO 356 or BOT 323)	5
Physiological Processes (BIO 300)	5
Continuity and Variation (BIO 301)	5
Diversity and Interrelationship (BIO 302)	5
Biology electives (consult adviser)	15
Chemistry specialization—45 hours	
Calculus (MAT 254 and 255)	10
Inorganic Chemistry (CHM 421)	5
Analytical Chemistry (CHM 280)	5
Organic Chemistry (CHM 340 and 341)	10
Physical Chemistry (CHM 490ABC)	15

Earth Science specialization—40 hours	
Earth Structure, Materials, Landforms(GLY 125; GLY 323; GGY 121)	15
Earth History (GLY 126; GLY 403)	10
Weather and Climate (GGY 120)	5
Bio and Soil (GGY 122)	5
Hydrosphere (GLY 409)	5
Astronomy (AST 291)	5

General Science (Grades 7, 8, and 9)—30 hours	
Physical Geology (GLY 125)	5
Historical Geology (GLY 126)	5
Specialization: biological science, earth science, or physical science	20

Physics specialization—50 hours	
Calculus (MAT 254, 255, 401)	15
Modern Physics (PCS 229)	5
Physical Options (PCS 333)	5
Electricity and Magnetism (PCS 332 or 429)	5
Mechanics (PCS 409)	5
Modern Physics (PCS 372 or 459; PCS 479)	10
Astronomy (AST 291)	5

Social Science Education (ESS)

Head: Rice

The following programs lead to secondary social science certification in Georgia, grades 7–12. In Georgia there are two types of certification, broad field social science and single discipline. Broad field social science certification covers four subjects—economics, geography, history, and political science. Single discipline certification includes behavioral science (anthropology, psychology, and sociology), economics, geography, history, and political science.

Program 1 below leads to single discipline certification. It consists of 75 hours, 35 hours in general social sciences and a 40 hour major in a single discipline (the behavioral science concentration requires a 40-10-10 distribution).

Programs 2 and 3 below lead to broad field certification in social science. They consist of 85 hours, 55 hours in specified social science courses and 30 hours in single discipline, area studies, or related field. Program 2 is broad field certification with a single discipline; Program 3 is broad field certification with an area studies or other multidisciplinary approach. The general and professional education requirements are common to the three programs. Details of the various programs may be obtained from the Undergraduate Adviser, Department of Social Science Education. Admission to the program in Social Science Education requires a cumulative grade point average of 2.5 for students enrolling after January 1, 1977.

Freshman and Sophomore General Requirements

	HOURS
English 101–102	10
Literature	10
CLC 120–121 Classical Culture, CML 121–122 Western World Literature, ENG 131–132 Masterpieces of Literature, or any Foreign Language Literature, such as French, German, Italian, or Spanish 201–202, Spanish American 205–206, or Russian 401–402	
Mathematics	10
STA 200 Elementary Statistics	
MAT 100, College Algebra or PHY 258 Modern Logic	
Science (10 hour laboratory sequence)	10
GGY 120 Weather and Climate	
GGY 121 Landforms	
GGY 122 Bio and Soil Geography	
Arts, Drama, or Music	5
FA 300 Music and the Visual Arts, ART 300 Appreciation	
DRA 300 World Drama and Theatre, MUS 300 Appreciation	
EIA 322 Industrial Arts and Handicrafts	
Health Education—HED 171	3
PE—Physical Education	5
	53

Professional Education Requirements

EPH 380 Introductory Philosophy of Education or EFN 303 Introduction to Education	5
EPY 304 Educational Psychology	5
EXC 500 or ESS 500 Introduction to Exceptional Children	5
The above may be taken in the sophomore or junior years, concurrently or in separate quarters, as field based or non-field based courses.	
ESS 335 Curriculum in Social Science Education	5
ESS 336 Teaching Procedures	5
ESS 345B School Practicum[1]	1
ESS 401 Social Science Media	3
ESS 499 Seminar in Educational Research	3
ESS 335, 336, 345, 400 and 499 are taken concurrently in the quarter preceding student teaching. No other courses should be scheduled concurrently with these courses.	
ESS 546, 547, 548 Student Teaching	15
	47

Social Science Education Courses

	Programs 1	2	3
Core Requirements	*35*	*55*	*55*
HIS 111, 112, 113 His. of Western Civilization		10	10
HIS 251, 252 American History	5	10	10
Behavioral Science	5	5	5
ANT 102 Man and His Culture			
PSY 101 Elementary Psychology			
SOC 105 Introductory Sociology			
POL 101 American Government	5	5	5
GGY 101-102 World Human Geography:			
Developed or Underdeveloped Nations		5	5
ECN 545 Contemporary Economics for Teachers: I		5	5
Additional Social Science Hours for Programs 2 and 3 must be selected from:		15	15
ECN 546 Contemporary Economics for Teachers: II			
ECN 133 Economic Development of the U.S.			
ECN 437 Comparative Economic Systems			
GGY 101-102 World Human Geography			
GGY 341 Political Geography			
GGY 358 Economic Geography			
POL 202 Contemporary Political Analysis			
POL 203 Introduction to International Relations			
Additional Social Science Hours for Program 1 may be selected from any of the preceding courses and:	20		
PSY 258 Psychology of Adjustment			
PSY 373 Social Psychology			
SOC 301 Structure of Am. Society			
SOC 293 Family			
ANT 405 Cultural Anthropology			
ANT 310 Peoples of the World			

Single Discipline Certification, Program 1, and Broad Field Certification and a Discipline, Program 2

Behavioral Science (Anthropology, Sociology, and Psychology: 40 hours in one, plus 10 from other two—see courses in behavioral science listed above)	60	30	—
Anthropology	—	30	—
Economics	40	30	—
Geography	40	30	—
History (American or World Options)	40	30	—
Political Science	40	30	—
Psychology	—	30	—
Sociology	—	30	—

Broad Field Certification and Area Studies and Other Multidisciplinary Programs, Program 3 (25 hours in history and social sciences, 10 in related subjects)

African Studies	—	—	30
American Studies—General	—	—	30
American Studies—Afro-American	—	—	30
American Studies—The South	—	—	30
Asian Studies	—	—	30
European Studies	—	—	30
Latin American Studies	—	—	30
Analysis of Public Issues	—	—	30
Philosophy and Religion	—	—	30
Environmental Education	—	—	30
Electives	20	10	10
Total Hours	195	195	195

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[1] *ESS 345A may be scheduled as September Practicum.*

Speech Education[1]

Head: O'Donnell

This program qualifies a student for a professional four-year certificate in Georgia to teach speech and English in secondary schools

Freshman and Sophomore Years
(Core Program)

	HOURS
ENG 101–102[2]	10
ENG 131–132 or CML 121–122[2]	10
Mathematics[3]	5
Laboratory Science Sequence[4]	10
Math/Science Elective[5]	5
Social Sciences[6]	20
EFN 303S	5
EXC 500	5
DRA 300	5
SPC 108	5
For. Lang. or Cross-Cultural Courses[7]	10
Physical Education	5
TOTAL	95

Junior and Senior Years[8]

Teaching Field:

SPC 209 or 210, Phonetics or Voice	5
SPC 240, Parliamentary Procedure	3
SPC 350 or 550, Debate	5
SPA 451, Speech Problems	5
ENG 20th-Century Literature	5
ENG 19th-Century American Literature	5
EEN 509, Composition	5
EEN 507, Language Studies	5
DRA 486, 487, or 488, Oral Interpretation	5
DRA 530, Play Production	5
JRL 380, Radio-Television	5
TOTAL	53

Professional Education:

EPY 304, Learning and Motivation	5
ERD 403, Reading in Secondary Schools	5
EEN 335, English Curriculum[9]	5
ESP 336, Teaching Procedures: Speech[9]	5
EEN 546, 547, 548, Student Teaching	15
TOTAL	35

Other Courses:

ECP 400 Human Relations Training[10]	2
HED 171, Health Problems	3
Foreign Language or Cross-Cultural Courses[7]	5
Electives	1
TOTAL	11

School Library Media Specialist

Undergraduate and graduate programs are available in library education. At the undergraduate level, a sequence of four or five courses, comparable to a second teaching field, leads to certification as an associate library media specialist; at the graduate level, a program leading to a Master of Education with a major in library education prepares librarians for full-time service in school libraries. Candidates for a master's degree in library education who have not qualified for the associate library media specialist certificate must earn 50 quarter hours in library education.

The basic library education courses are offered each quarter, including summer quarter. None are given by correspondence.

PROGRAMS FOR TEACHERS OF EXCEPTIONAL CHILDREN

Speech Pathology and Audiology

Head: Curtis

The speech pathology and audiology programs meet the curricular requirements for either the Certificate of Clinical Competence in Speech Pathology or Audiology of the American Speech and Hearing Association or the T5 teaching certificate of the Georgia Department of Education. Students entering this curriculum receive a Bachelor of Science degree after four years of

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reparation in English is provided in this program so the teaching major is really speech/English. Though a few "speech only" majors might be accommodated, priority in admission to the program and in student teaching placement will go to students with the combination major.

[2] If the student exempts any of these by examination, but without credit, he should choose a substitute from English, foreign language, speech, drama, art, or music.

[3] MAT 100, 101, 115H, or STA 200.

[4] BIO 101–102, CHM 111–112 or 121–122, GGY 121–122, GLY 125–126, or PCS 127–128.

[5] GGY 104, GGY 120, AST 291, PHY 258, PCS 101, or any course listed in footnotes 3 or 4.

[6] ANT 102, ECN 105, GGY 101, GGY 102, HIS 111, 112, 251, 252, POL 101, PSY 101, SOC 105.

[7] Fifteen hours of work in either a foreign language or cross-cultural understanding will be divided between the core program and "Other Courses."

[8] All students who desire a teaching certificate in speech must request an advisor in the Department of Language Education.

[9] These courses may be taken only by application, which must be made no less than one month prior to registering (early or regular) for them.

[10] Required only if such training is not part of another course, such as EFN 303S.

successful study but must complete an additional fifth year or meet the Master of Education requirements in order to enter professional work as a speech pathologist, audiologist or teaching of the hearing impaired. This program is appropriate, as pre-professional training for the three graduate degree programs.

Bachelor's Degree in Speech Pathology (pre-professional)

Freshman and Sophomore Years

	HOURS
English 101–102	10
Speech 108 or 109	5
Political Science 101	5
Biology 101–102 or Physics 121–122	10
Mathematics 100 or 101	5
Introduction to Education 303 with School Practicum	5
Physical Science or Mathematics	5
History 251 or 252	5
Humanities	10
Social Science 104 or Economics 112, History, or Sociology 105, or Anthropology 102	5
Psychology 101	5
Speech 209	5
Speech 210	5
Physical Education	5
Speech Pathology/Audiology 310	5
Speech Pathology and Audiology 505, 509, 510, 511	8

Junior and Senior Requirements

Educational Psychology 304	5
Health Education	3
Reading Education 401 or EEN 500	5
Exceptional Children 500	5
Psychology 258, 423	5
Speech Pathology and Audiology 546, 547, 548	15
Child, Family Development 395	5
Speech 466, Psychology 480 or EEN 522	5
Speech Pathology and Audiology 412, 413, 414, 450, 471, 474, 475, 476, 538, 578	35
Speech Pathology and Audiology 501, 502, 503, 511	8

Speech Pathology (Professional Degree)
A program of study leading to the Master of Education degree in Speech Pathology is offered through the Graduate School of the University. Please consult the Graduate School Bulletin for admission and degree requirements and course descriptions.

Audiology (Professional Degree)
There is no program leading to an undergraduate degree in audiology. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Hearing Impaired (Professional Degree)
There is no program leading to an undergraduate degree in the area of hearing impaired. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Teaching Mentally Retarded Children
Head: Hurley

Freshman and Sophomore Years

	HOURS
English 101, 102	10
Mathematics 100, 205, 206 or other approved course	5
Political Science 101	5
Biological or Physical Science (Lab required)	10
History 251 or 252	5
Physical Education	5
Math or Science (approved elective)	5
Social Sciences (approved electives)	10
Humanities (approved electives)	10
Introduction to Education 303	5
Educational Psychology 304	5
Human Growth and Development 395	5
Psychology of Adjustment 258	5
Industrial Arts and Handcrafts for Teachers 332	5

Junior and Senior Years

	Hours
Exceptional Children 500, 501, 504, 506, 508, 595	30
Student Teaching 546, 547, 548	30
Speech Pathology 451	5
Teaching of Reading 401	5
Teaching of Mathematics 501	5
Recreation for the Mentally Retarded 537	5
Practicum	10
Health Education 171	3
Teaching Method Elective	5
General Electives	7

Teaching Multi-handicapped Children
There is no program leading to an undergraduate degree in the multi-handicapped area. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Teaching Emotionally Disturbed Children

There is no program leading to an undergraduate degree in the emotional disturbance area. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

Teaching Children With Learning Disorders

There is no program leading to an undergraduate degree in the area of learning disorders. All programs are at the master's level and above. For further information, see the Graduate School Bulletin.

VOCATIONAL EDUCATION

Chairman: O'Kelley

The programs in the overall area of Vocational Education lead to professional teacher certification in the teaching fields of agricultural education, comprehensive business education, accounting-business management, business data processing-accounting, distributive education, industrial arts, and trade and industrial education. A program leading to provisional certification for coordinators of diversified cooperative training is also available, and a program leading to provisional certification for directors of vocational education which may be changed to professional status at the graduate study level may be planned.

Agricultural Education

Head O'Kelley

This program leads to the degree Bachelor of Science in Agriculture in the College of Agriculture. (See College of Agriculture.)

Business Education

Head: Calhoun

Freshman and Sophomore Years

	HOURS
English 101–102	10
Political Science 101	5
Mathematics 100	5
Biology 101–102 or Botany 121–122	10
Introduction to Education 303	5
Physical Science[1]	5
Comparative Literature 121–122 or English 131–132	10
History 251 or 252	5
Psychology 101	5
Economics 105, 106	10
Accounting 110, 111	10
Physical Education	5
Industrial Arts 332 or Fine Arts 300	5
Health Education 171	3

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[1] *Geography 104, 121; Chemistry 121; Geology 125; Physics 127 or Physical Science 101*

Junior and Senior Requirements
(Concentration Areas)

Three undergraduate programs in business education are available. The comprehensive business education curriculum is designed to prepare students to teach *all business subjects*, the accounting—business management curriculum is designed to prepare students to teach *basic business subjects*, and the business data processing—accounting curriculum is designed to prepare students to teach *business data processing and related subjects.* A student will be certified in one of these major concentrations.

I. Comprehensive Business Education

Educational Psychology 304	5
Audio-Visual Education 401	3
Business Education 335, 336	10
Business Education 546, 547, 548	15
Industrial Arts 332 or Fine Arts 300	5
Business Education 301, 302	10
Business Education 305	5
Business Education 310, 311, 401	15
Business Education 507, 508, 512, 576	20
Accounting 270 or 370	5
Business Core[2]	5
Special Education 500	5
Electives	5

II. Accounting-Business Management

Educational Psychology 304	5
Audio-Visual Education 401	5
Business Education 335, 336, 512	15
Business Education 546, 547, 548	15
Business Education 305	5
Business Education 311, 401	10
Business Education 507, 508, 576	15
Accounting 353 or 355, 270 or 370	20
Finance 330	5
Management 351	5
Marketing 360	5
Management Science 312 or Management 541	5
Special Education 500	5
Electives	5

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[2] *Marketing 360, Management 351, Finance 330 or Insurance 381*

III. Business Data Processing-Accounting

Educational Psychology 304	5
Audio-Visual Education 401	3
Business Education 305	5
Business Education 311	5
Business Education 335, 336	10
Business Education 546, 547, 548	15
Business Education 401	5
Business Education 507, 508, 512, 576	20
Business Education 509, 510	10
Accounting 353, 270 or 370	10
Management 351, 551	10
Statistics 503	5
Special Education 500	5
Electives	5
Approved electives from the School of Business Administration or College of Education	12

Distributive Education

Head: Sanders

Freshman and Sophomore Years

	HOURS
English 101–102	10
Mathematics 100	5
Botany 121–122, or 10 hrs. sequence lab science	10
Political Science 101	5
Speech 108	5
Art 120 or 300 or 308	5
Introduction to Education 303	5
Physical Science 101	5
Comparative Literature 121 or ENG 131, 132	5
Psychology 101	5
Economics 105, 106	10
Distributive Education 100	5
History 251 or 252	5
Physical Education	5
HED 171	3
Approved electives	5
Distributive occupational experience 200 or approved work experience	5

Junior and Senior Requirements

Educational Psychology 304	5
Distributive Education 301	5
Distributive Education 335, 336	10
Distributive Education 546, 547, 548	15
Vocational Education 503	5
Accounting 270 or Economics 386	5
Marketing 360	5
Marketing 560	5
Marketing 563 or MKT 567 or JRL 557	5
Marketing 561 or MKT 565	5
Marketing 564	5
Management 351	5
SOC (Adviser's Approval)	5
Audio-Visual Education 500 or 501	5

Health Occupations Education[1]

Coordinator: Milliken

This program is designed for persons who hold credentials as health practitioners and/or equivalent experience in a clinical health specialty area, who wish to qualify for credentialing as educators. Admission to the program requires current registration (licensure or certification) in a health profession, where applicable, and documentation of work experience in the health field, sufficient to meet the provisions of the Georgia State Plan for Vocational Education.

Freshman and Sophomore Years

	HOURS
English 101, 102	10
Speech 108 or 109	5
History 251 or 252	5
Mathematics 100	5
Political Science 101	5
Biological Science	10
Physical Science	10
Psychology 101	5
Humanities electives	10
Social Science electives	10
Mathematics or Science electives	10
Approved electives	5
Physical Education	5

Junior and Senior Requirements

Educational Media 500, 501, or 502	5
Educational Psychology 304	5
Technical electives	25
Health speciality areas:	
Clinical subjects or approved electives	45
Health Occupations Education 335, 336, or 503, 501	10
Health Occupations Education 546, 547, 548[1]	15
Health Occupations Education 345	3
Health Occupations Education 501, 502, 503	10
Education for the Handicapped EXC 500[2]	5
Professional Education elective	5

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[1] *Note: Health professionals whose credentials are based upon satisfactory performance on a national certifying examination may qualify for advanced standing (up to 25 quarter hours).*

[2] *Required for teaching certificate.*

Home Economics Education

Head: Cross

This program leads to the degree Bachelor of Science in Home Economics in the School of Home Economics. (See School of Home Economics.)

Industrial Arts Education

Head: Pollock

Freshman and Sophomore Years

	HOURS
English 101–102	10
Mathematics 100	5
Political Science 101	5
Speech 108	5
History 111 or 251	5
Laboratory Science	5
Introduction to Education 303 or Philosophy of Education 380	5
Educational Psychology 304	5
Industrial Arts Education 100	5
Industrial Arts Education 101, 102	10
Industrial Arts Education 305	5
Industrial Arts Education 310	5
Industrial Arts Education 315	5
Industrial Arts Education 320	5
Industrial Arts Education 326	5
Physical Education	5

Junior and Senior Requirements

Psychology 101	5
History 112 or 252	5
Humanities (see Area I, Core Curriculum)	5
Health Education 171	3
Sociology	5
Educational Media 500 or 501	5
Industrial Arts Education 300	5
Industrial Arts Education 328	5
Industrial Arts Education 330	5
Industrial Arts Education 335, 336	10
Industrial Arts Education 546, 547, 548	15
Industrial Arts Education 502	5
Industrial Arts Education 504	5
Industrial Arts Education 521	5
Approved electives	17

Trade and Industrial Education

This program leads to professional certification as coordinators of diversified cooperative training and teachers of trade and industrial subjects.

Before a graduate is recommended for a professional certificate in this field, the applicant must furnish evidence of work experience in amount and kind which will satisfy provisions of the Georgia State Plan for Vocational Education.

Freshman and Sophomore Years

	HOURS
English 101–102	10
Speech 108	5
History 251 or 252	5
Political Science 101	5
Mathematics 100	5
Laboratory Science	10
Psychology 101	5
English or Humanities Electives	10
Social Science Electives	10
Mathematics or Science Electives	5
Introduction to Education 303	5
Health Education 171	3
Educational Psychology 304	5
Physical Education	5
Special Education	5

Junior and Senior Requirements

	HOURS
Trade and Industrial Education 335, 336 546, 547, 548	25
Trade and Industrial Education 500, 501, 502, 503, 505, 508[1], 511	30
Trade and Industrial Electives 400, 504, 506, 509, 510	15
Trade and Industrial Technical Electives EVO 525, 526, 527, 528, 529[2]	
Approved electives to fulfill the 190 hour minimum requirement (exclusive of PE and ROTC credit)	

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[1] *Required for D.C.T. Coordinators.*

[2] *See course description listed under Vocational Education. NOTE:*

(1) Technical school graduates and others with competency in an occupation may be granted advanced standing (up to 25 quarter hours) by successful completion of a competency examination. This is to be classified as technical electives.

(2) EPY 304, ETI 501, or ETI 335, and ETI 502 or ETI 336 must be completed and admission to teacher education gained before ETI 546, 547, 548, and 349 can be scheduled (75 quarter hours of work must have been completed).

THE SCHOOL OF ENVIRONMENTAL DESIGN

ADMINISTRATIVE OFFICER

Robert P. Nicholls, B.Arch. (Hons.), M.C.B., M.L.A., *Dean*

GENERAL INFORMATION

The School of Environmental Design serves the state and region as a center for developing the leadership and understanding required to design and plan for a better environment. The undergraduate program consists of professional instruction in landscape architecture. Emphasis is placed on the education of students to meet the requirements being placed on environmental designers in a rapidly changing world.

Originally limited to the design of domestic properties, today the profession of landscape architecture takes pride in a much broader responsibility as designer and guardian of all outdoor space for the benefit, protection, use and enjoyment of man. Both an artist and a scientist, the landscape architect works with earth, water, construction materials, and living plants. He uses these to create the new and improve or preserve the old. But whether he is working in crowded cities or open country, his tools are horticultural, engineering and artistic skills, as well as an appreciative understanding of the ecological dynamics of the natural environment. He must learn to combine these skills with insight, sensitivity, and imagination so that he can help to shape an environment which is beautiful, functional, appropriate and of continuing value to its inhabitants.

Degrees Offered

The studies offered in landscape architecture at The University of Georgia are built around a curriculum designed to prepare students for professional practice. The program leads to the Bachelor of Landscape Architecture degree. This five-year professional program is accredited by the National Commission on Accrediting and the American Society of Landscape Architects. A Master of Landscape Architecture degree is offered through the Graduate School of the University. Additionally, a joint degree program with Georgia Institute of Technology's Department of City Planning makes it possible for a B.L.A. graduate to receive the master of city planning degree along with the master of landscape architecture degree.

Field Trips

Supervised field trips are required of all students in connection with their classes. Students travel at their own expense to designated places of landscape interest in Georgia and adjoining states, accompanied by a member of the teaching staff. Visiting critics and lecturers often are invited to supplement the staff's offerings.

Studies Abroad

Slected students are permitted to enroll in a studies abroad program and may receive credit towards their degree. In conjunction with the Department of Visual Arts, the School provides a studio program in Italy offering up to ten credit hours of instruction in landscape architecture and five credit hours of instruction in art history. A European Travel-Study program is also available for credit. This program features visits to some of the most significant historic and contemporary examples of European landscape architecture and planning.

BACHELOR OF LANDSCAPE ARCHITECTURE DEGREE REQUIREMENTS

Pre-Professional Core Curriculum

This program is intended to prepare students for the professional program in landscape architecture. For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*, page 24.

		HOURS
AREA I HUMANITIES		20
English 101, 102	10	
To complete requirements, elect from Comparative Literature 121, 122; English 131, 132; Speech 108; Philosophy 104; Classics 120, 121	10	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Botany 121, 122 or Biology 101, 102	10	
To complete requirements, elect from Mathematics 100, 101, 116, 235, 254	10	
AREA III SOCIAL SCIENCES		20
Political Science 101	5	
Elect one course from History 100, 111, 112, 251, 252	5	
To complete requirements, elect from Anthropology 102; Economics 105, 106; Geography 101, 102; Philosophy 104, 258; Sociology 105; Political Science 102; Religion 115; Psychology 101	10	
AREA IV COURSES RELATED TO MAJOR		30
Agricultural Engineering 210	5	
ART 120, 130, 260 or other graphics art	5	
Horticulture 325 or 362	5	
*To complete requirements, elect from Biology 350; Botany 205; Geology 125, 126; Geology/Landscape Architecture 520; Geography 104, 120, 121, 122, 410, 420, 459, 463	15	

Professional Program

First Professional Year

LAR 300, Basic Design Studio I
LAR 305, Basic Design Studio II
LAR 320, Architectural Design Studio
LAR 323, Landscape Ecology
LAR 343, Graphics I
LAR 344, Graphics II
LAR 357, Landscape Construction
LAR 372, History of Landscape Design
LAR 373, History and Theory of Architecture

Second Professional Year

LAR 303, Plant Materials
LAR 304, Planting Design I
LAR 315, Introductory Landscape Design Studio
LAR 316, Intermediate Landscape Design Studio
LAR 322, Intermediate Architectural Design Studio
LAR 350, Landscape Engineering
LAR 351, Plant Materials
LAR 358, Advanced Landscape Engineering
LAR 453, City Planning

Third Professional Year

LAR 317, Intermediate Landscape Design Studio
LAR 318, Advanced Landscape Design Studio
LAR 319, Advanced Landscape Design Studio
LAR 340, Professional Practice in Landscape Architecture
LAR 354, Planting Design II
LAR 355, Terminal Problem
Elective*
Elective*
Elective*

135

Professional Experience

LAR 410, 411, 412, Landscape Architecture Internship (10 hours required)	10
Total Credits for Bachelor of Landscape Architecture	235

**Other Related Courses may be approved by the Dean or Advisor*

**Selected from LAR 333, Advanced Architectural Design Studio; LAR 352 Plant Materials; ENV 476, Restoration and Preservation of Historic Buildings and Sites or Area IV Courses Related to Major.*

THE SCHOOL OF FOREST RESOURCES

ADMINISTRATIVE OFFICER

Allyn Marsh Herrick, B.S., M.F., Ph.D., *Dean*

GENERAL INFORMATION

The School of Forest Resources was established through the generosity of George Foster Peabody in 1906. It is the oldest such institution still in existence in the South and is fully accredited by the Society of American Foresters. The school is ideally situated for its role as a regional school, readily accessible to the three major forest provinces of the southeastern United States: mountain, piedmont, and coastal plain.

Purpose

The goal of the School of Forest Resources is to provide an education equipping future managers and scientists to provide optimum human benefits from forest resources. This involves: 1) understanding the forest environment; 2) competent application of professional skills; 3) skillful interpretation of forest resources management and science philosophy, policies, and procedures to society at large.

Facilities

The School of Forest Resources is housed in facilities providing modern classrooms, offices, and laboratories for teaching and research. These facilities have been specifically designed to accommodate contemporary approaches to the management and utilization of forest resources.

Electronic calculators and other ultramodern equipment are maintained at the School for classroom, field, or laboratory use. Recently established is a self-teaching laboratory equipped with the latest audiovisual teaching machines available.

Specialized laboratories for genetics, utilization, wildlife, fisheries, pesticides, recreation and hydrology are located on the 750-acre Whitehall Forest. This facility, administered by the school, is five miles from the main campus. Four other forest properties of the school, comprising more than 13,000 acres, are used for teaching, research, and demonstration purposes.

Undergraduate Study

The academic program at the undergraduate level consists of two parts: the pre-professional forest resources program, which may be taken during the student's first two years either in the University's College of Arts and Sciences or at another institution; and the professional forest resources program, to be completed at the School of Forest Resources.

Pre-Forest Resources Program

HUMANITIES	HOURS
English 102	5
Speech 108	5
Comparative Literature 121, 122 or English 131, 132	5
Elective—such as Drama 222, English 203 or 204, Philosophy 104, Religion 115, or any foreign language at the intermediate level	5
MATHEMATICS AND NATURAL SCIENCE	
Mathematics 116, 253[1]	10
Biology 101, 102	10
Chemistry 121, 122, 261	15
Physics 127, 128	10
Statistics 200	5

SOCIAL SCIENCE	
Economics 105, 106	10
Political Science 101	5
History 111, 112, 251, or 252	5
	90

Students selecting the fish and wildlife concentration in the professional program must complete Zoology 226 prior to admission. Credit for Zoology 226 will be transferred to the professional program degree requirements.

Professional Program

To be admitted to the professional forest resources program in the School of Forest Resources, a student must complete the pre-professional requirements. The two years of pre-professional education require satisfactory completion of the specified program of not less than 90 quarter hours in the arts and sciences, as well as the general requirements for physical education. Students having 90 hours of credit may be admitted with not more than 5 quarter hours of deficiency in required courses, provided such deficiency is approved by the forest resources admissions committee and can be completed at an appropriate time during the professional program.

Application for admission to the school should be submitted by April 1 for fall admission and July 15 for winter admission. Students should submit their application to the University of Georgia admission office when they have completed four quarters of work. Transcripts showing all college work taken must accompany the application.

In considering applications for admission to the School, preference will be given to those persons having a 2.5 or above grade average earned in the pre-professional program. Applicants must have earned a minimum average of 2.0 in the pre-professional program. It is desirable that each applicant participate in a personal interview and evaluation prior to entering the School

Degree Offered

The School of Forest Resources offers the undergraduate degree of Bachelor of Science in Forest Resources. Areas of concentration include: timber management and utilization; forest water resources; fish and wildlife biology; forest resources planning and administration; and forestry sciences.

Courses required in the professional core and concentration areas, as well as descriptions of all courses and details of other academic matters, appear in the separate School of Forest Resources Bulletin, which may be obtained by writing to the Dean, School of Forest Resources, The University of Georgia, Athens, Georgia 30602.

Graduate Study

Through the Graduate School of the University, the following advanced degrees are offered: Master of Science, Master of Forest Resources, and Doctor of Philosophy in all disciplines related to forest resources. See the Graduate School Bulletin for further information.

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[1] *Math 101 may be substituted for 116; students admitted directly to Math 253 will take Math 254 or 5 quarter hours approved by the School of Forest Resources Admissions Committee.*

THE SCHOOL OF HOME ECONOMICS

ADMINISTRATIVE OFFICER

Emily Quinn Pou, B.S., M.S., Ph.D., *Dean*

GENERAL INFORMATION

Purpose and Organization

The School of Home Economics offers training for a number of professional careers and, in addition, prepares students for effective personal and family life. The curricula provide well-rounded programs of general, scientific, and technical education.

About one half of the requirements for the home economics degree are planned to provide general education for personal enrichment and to serve as a base on which to build specialized professional courses. The remainder of the courses provide training for professions. Twenty-one majors are available. Special programs allow students to concentrate in both a major area of home economics and a related area of science. The combined major areas permit a student to acquire a major in one of the departmental programs as well as achieve certification for teaching in the public school system. These programs are listed under the section Combined Major Programs. Men and women students from other schools in the university also may take courses in home and family education or in technical phases of home economics.

Career Opportunities

Many diverse career opportunities are open to the graduate in home economics. A student may prepare for an educational career in primary, elementary, junior high or senior high schools; vocational technical schools; nursery schools; kindergartens; in preschool programs for children in hospitals, and day care centers; in youth group or adult group work; an industrial career in commercial and financial companies, consultant firms, in merchandising, product development laboratories, public utilities, and trade and industrial associations; a communications career in advertising, newspapers, magazines and trade journals, in radio and television; or a career in dietetics and institutional management.

Facilities

Dawson Hall and its annex, located on South Campus, house the modern and fully equipped teaching laboratories and classrooms for equipment, foods, nutrition, textiles, clothing, housing and home furnishings, as well as research laboratories, student and faculty lounges, and an auditorium.

Four home management residence laboratories serve as teaching laboratories for home management and home furnishings. Students living there in small groups for a quarter's residence gain experience in applying their training to a family situation.

The Margaret E. McPhaul Child and Family Development Center houses laboratories for instructional and research activities which provide opportunities for observations of and work with normal infants, children under six, parents and families. In addition, facilities at the Athens Unit of the Georgia Retardation Center provide instructional, research, observational, and participation opportunities with retarded individuals ages three through eighteen and their families.

Degree Offered

The School of Home Economics offers the degree of Bachelor of Science in Home Economics.

Graduate Study

The School of Home Economics offers graduate study in several phases of work leading to either the Master of Science degree or the Master of Home Economics degree, and the Doctor of Philosophy degree in Child and Family Development, administered by the Graduate School. For further information, refer to the Graduate School Bulletin.

Degree Requirements

A student should become acquainted with the general degree requirements applicable to all students of the university as set down in the general information of this bulletin.

Hours

A total of 196 quarter hours is required for the Bachelor of Science in Home Economics degree.

Grade Average

Any student who does not have an average grade of 2.0 or more at the end of the quarter in which 85 academic quarter hours of work have been completed will not be entitled to continue in attendance in the School of Home Economics except by special permission of the dean. Such permission will be granted only in exceptional cases; required will be satisfactory achievement in basic freshman and sophomore courses. An average of at least 2.0 must be earned in all courses taken either in home economics or in the joint major area of concentration before credit for the course will be given for graduation. Admission to the Clothing and Textiles Department is limited to those students with a grade point average of 2.5 or above. Entering freshmen must have a projected grade point average of 2.5 or above in order to be accepted into the department. A grade point average of 2.8 is required for admission to the Department of Housing, Furnishings, and Home Management.

Choosing a Major

The major is declared within or by completion of 60 hours. The major should conform to one of the plans listed under the respective major. Minor changes in programs may be made upon recommendation of the major professor with approval of the dean.

Special Programs

Home Economics and Natural or Social Science

Men and women students may take special programs designed to provide concentration in a single major area of home economics and in a related area of natural or social science. This type of program may be taken only by a student of proven academic ability and with permission of the dean. The curriculum will be planned to meet the needs of each student, but must include at least 80 quarter hours of general education (humanities and sciences), 40 quarter hours in courses numbered 200 or above in the major area of home economics, and 40 quarter hours in specified related areas of science. These special programs are particularly suitable for students planning for graduate study in certain subject matter areas of home economics.

Honors Program

Qualified students are encouraged to participate in both junior and senior division honors programs. Home economics honors courses are listed under the respective departments. Interested students also should consult the listing, Program for Superior Students.

BACHELOR OF SCIENCE IN HOME ECONOMICS DEGREE REQUIREMENTS

Core Curriculum

For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The Core Curriculum*, page 24.

	HOURS	
AREA I HUMANITIES		20
English 101, 102	10	
Literature: English or foreign language, or classical culture; philosophy, speech, communications, art	10	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Astronomy, biology, botany, chemistry, physical geography, geology, physics, physiology, or zoology	5	
Mathematics: Select from Mathematics 100, 101, 105, 116, 235, 253; Statistics 200, 500; Philosophy 258	5	
Laboratory sequence: At least 10 hours must be taken in one laboratory science sequence from biology, botany, chemistry, physics, physiology, zoology	10	
AREA III SOCIAL SCIENCES		20
Introductory anthropology, economics, psychology, or sociology as appropriate to intended major		

Social Sciences: Hours not specified for a designated major should be selected from anthropology, economics, human geography, philosophy, psychology, or sociology	5
History	5
Political Science 101	5
AREA IV COURSES RELATED TO MAJOR	30
Home economics courses from family relations, food, clothing and home furnishings	15
Courses specified for a particular major including, but not limited to, art, physical or social sciences	15

Other Degree Requirements

The following four 5-hour courses totalling 20 hours are required of all students pursuing the Bachelor of Science in Home Economics degree: Child and Family Development 210; Clothing and Textiles 210; Foods and Nutrition 210; and Housing, Furnishings, and Home Management 210.

Any courses exempted with or without credit by advanced placement shall satisfy the specific degree requirement; courses exempted without credit may be replaced by free electives.

All academic regulations of the university in respect to residence and degree requirements must be satisfied.

Total Academic Hours (minimum) 196

This total includes 191 academic hours required by the School of Home Economics to satisfy degree requirements, plus five hours of physical education to satisfy university requirements. This total excludes any credit hours for basic ROTC.

Major

The twenty-one majors are described under the areas of Child and Family Development, Clothing and Textiles, Foods and Nutrition, Housing, Furnishings, and Home Management, Home Economics Education, and Home Economics and Journalism.

Child and Family Development (CFD)

Child Development

Preparation for work with young children through public and private nursery schools, child-serving agencies and children's clinics and hospitals. Students interested in research or college teaching in this area will be prepared for advanced study with this major.

Required Courses	HOURS
CFD 395 (Psychology) Introduction to Child Development	5
CFD 461 (Sociology) The Family	5
or	
CFD 495 Contemporary Family	
CFD 390 Prenatal-Infant Development	5
or	
CFD 409 Infant Development	
CFD 496 (Early Childhood Education) Guidance of Children and Parents	5
CFD 492 Individual and Family Development Facilitation	5
CFD 497 Marriage, Family, and Human Sexuality	5
or	
CFD 407 A Survey of Marriage and Family Problems	
CFD 591 Creative Activities for Nursery School and Kindergarten	5
CFD 598, 599 Practicum in Child and Family Development	10
CFD 594 Nursery School and Kindergarten Theories and Administration	5
SOC 105 Introductory Sociology	5
PSY 101 Elementary Psychology	5
FDN 350 Advanced Meal Planning and Service	5
MAN 351 Organizational Behavior	5
ACC 116 Survey of Accounting	5
HFM 364 Principles of Family Economics	5
or	
EPY 506 Classroom Learning Problems of Disadvantaged Children and Youth	
Approved electives	40

Students may earn credit in foreign study programs, or other areas with approval of their major adviser.

Child and Family Development

Students whose main interest is in research and/or college teaching will be best prepared with this major. For admission into this major, a grade point average of 3.0 is required.

Required Courses	HOURS
CFD 395 (Psychology) Introductory Child Development	5
CFD 461 (Sociology) Sociology of the Family	
or	
CFD 495 Contemporary Family	5
STA 200 Elementary Statistics	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
Select 20 hours in upper division courses from:	20
Anthropology, Psychology, Sociology	

Select 10 hours of one language:	10
French, German, Russian, Spanish	
Select 20 hours from:	20
Of the 20, select 5 hours from:	
CFD 390 Prenatal and Infant Development	
or	
CFD 461 (Sociology) Sociology of the Family	
or	
CFD 409 Infant Development	
Of the 20, select 5 hours from:	
CFD 407 A Survey of Marriage and Family Problems	
or	
CFD 461 (Sociology) Sociology of the Family	
or	
CFD 495 Contemporary Family	
Related area of concentration	20
Approved electives	44

Students may earn credit in foreign study programs, or other areas with approval of their major adviser.

Child Development—Early Childhood Education

Preparation for teaching in nursery school, kindergarten, and primary grades 1–3; a joint major with the College of Education. This program leads to a certificate to teach in the primary schools from kindergarten through grade three.

Required Courses	HOURS
CFD 496 (Early Childhood Education) Guidance of Children and Parents	5
CFD 591 Creative Activities for Nursery School and Kindergarten	5
CFD 598, 599 Practicum in Child and Family Development	10
ECE 333 Primary Program and Curriculum Development	5
EEN 442 Language Arts Methods	3
EMT 442 Mathematic Methods	3
ESC 442 Science Methods	3
ESS 442 Social Science Methods	3
EPY 304 Learning and Motivation	5
EEN 300 Children's Literature for Early Childhood Education	3
ECE 302 Orienting Practicum	6
ECE 546, 547, 548 Student Teaching in Early Childhood Education	15
EFN 303c Introduction to Early Childhood Education	5
ERD 442 Teaching Reading	5
CFD 343 (Early Childhood Education) Teaching Learning Strategies I	3
ECE 344 Teaching Learning Strategies II	3
HED 344 Problems in School Health	3
PED 442 Movement Education for Young Children	5
EAV 401 Basic Media Instruction	3
MUS 305 Music for Early Childhood Education	5
and	
MUS 303 Music Skills and Fundamentals for Elementary School Teachers	3
or	
ART 305 Music Methods in Early Childhood Education	5
PSY 101 Elementary Psychology	5
PSY 395 Introductory Child Development	5
MAT 205, 206 Math for Elementary Teachers	10
Select 10 hours from:	10
BIO 105 Biology for Elementary Teachers	
BIO 106 Biology for Elementary Teachers, A Cultural Approach	
or	
BIO 101, 102 Principles of Biology	
or	
BOT 121, 122 Elementary Botany	
Select 5 hours from:	5
GLY 105 Geology for Elementary Teachers	
PCS 105 Physics for Elementary Teachers	
CHM 105 Introductory Chemistry	
Select 5 hours from:	5
CFD 407 A Survey of Marriage and Family Problems	
CFD 461 (Sociology) Sociology of the Family	
CFD 495 Contemporary Family	
CFD 492 Individual and Family Development Facilitation	
CFD 497 Marriage, Family and Human Sexuality	

Students may earn credit in foreign study programs, or other areas with approval of their major adviser.

Child Development—Mental Retardation

Preparation for work with mentally retarded individuals functioning at early developmental levels in child care centers, schools, hospitals, or residential institutions. Students interested in research, administrative positions, or college teaching in this area will be prepared for advanced study with this major.

REQUIRED COURSES	HOURS
CFD 496 (Early Childhood Education) Guidance of Children and Parents	5
CFD 591 Nursery School and Kindergarten Activities	5
CFD 598 Practicum in Child and Family Development *or* Mental Retardation	5
CFD 595 (Exceptional Children) Teaching Severely Mentally Retarded Children	5
REC 357 Recreation for the Mentally Retarded	5

EXC 500 Introduction to Exceptional Children	5
EXC 504 Nature of Mental Retardation	5
EXC 501 Clinical Problems in the Education of Exceptional Children	5
SPA 451 Speech and Language Problems in the Classroom	5
REC 537 Recreation for the Mentally Retarded	5
EPH 380 Introductory Philosophy of Education	
or	
EFN 303 Introduction to Education	5
EPY 304 Learning and Motivation	5
EXC 546S, 547S, 548S Student Teaching With Severely Mentally Retarded	10-15
EAV 401 Basic Media Instruction	3-5
or	
EAV 500 Utilization of Educational Media	
HED 344 Problems in School Health Education	5
BIO 101 Principles of Biology	
or	
BIO 200 Biological Topics of Social Interest	5
PSY 101 Elementary Psychology	5
PSY 395 (Child Development) Introduction to Child Development	5
Select 15 hours from:	
CFD 492 Individual and Family Development Facilitation	5
CFD 594 Nursery School and Kindergarten Theories and Administration	5
CFD 599 Practicum in Child and Family Development	5
CFD 390 Prenatal-Infant Development	5
CFD 495 Contemporary Family	5
CFD 461 (Sociology) The Family	5
CFD 393 (Sociology) Family Relations	5
CFD 408 (Psychology) Development of the Young Child	5
EXC 515 Nature of Physical Limitations	5
EXC 520 Behavioral Disorders in the Classroom	5
Approved electives	17-19

Students may earn credit in foreign study programs, or other areas with approval of their major adviser.

Family Development

Preparation for work with agencies dealing with family adjustment, child serving agencies, or positions requiring professional work in family life as a focus. Students intersted in research or college teaching in this area will be prepared for advanced study with this major. Forty quarter hours are required from the following CFD courses:

REQUIRED COURSES	HOURS
PSY 322 Experimental Psychology	5
or	
SOC 356 Elementary Research Methods in Sociology	
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
ECN 105 Principles of Economics I	5
Select 40 hours from:	
CFD 393 (Sociology) Family Relations	5
CFD 390 Prenatal and Infant Development	5
CFD 395 (Psychology) Introduction to Child Development	5
CFD 407 A Survey of Marriage and Family Problems	5
CFD 461 (Sociology) Sociology of the Family	5
CFD 492 Individual and Family Development Facilitation	5
CFD 495 Contemporary Family	5
CFD 496 (Education) Guidance of Children and Parents	5
CFD 497 Marriage, Family and Human Sexuality	5
STA 200 Elementary Statistics	5
Related area of concentration	30
Approved electives	34

Students may earn credit in foreign study programs or other areas with approval of the major adviser.

Clothing and Textiles (CLT)

Admission to the Clothing and Textiles Department is limited to those students with a grade point average of 2.5 or above. Entering freshmen must have a projected grade point average of 2.5 or above in order to be accepted into the department.

Clothing and Textiles Major

Preparation for careers related to the clothing field. Students interested in research or college teaching will be prepared for advanced study.

REQUIRED COURSES	HOURS
CLT 122 Construction	3
CLT 321 Advanced Clothing	5
CLT 360 Advanced Textiles	5
CLT 561 Clothing and Textiles Economics	5
CLT options	20
CHM 112	5
ECN 105	5
HFM 364 or 375	5
MKT 360	5
Approved Supporting Course Option	5
Related Concentration	15
Electives	37

Fashion Merchandising Major

Preparation for careers in the fashion retail industry. The program will familiarize the student with the career opportunities open in buying, coordination, and the promotion of fashion.

REQUIRED COURSES	HOURS
CLT 122 Construction	3
CLT 321 Advanced Clothing	5
CLT 333 Fashion Product Analysis and Selling	5
CLT 334 Introduction to Fashion Merchandising	5
CLT 335 Fashion Promotion and Display	5
CLT 463 Historic Costume	5
CLT 561 Clothing and Textiles Economics	5
CLT Options	10
ACC 110 or 116	5
ECN 105	5
MKT 360	5
MKT 560	5
Approved Marketing Course	5
Supporting Course Option (Approved by Department)	5
Related Concentration (combination of courses approved by department in Management, Marketing, and Journalism with minimum of two courses in one area)	20
Electives	22

Foods and Nutrition (FDN)

Dietetics and Institutional Management

This major meets the Plan IV requirements of the American Dietetic Association for admission to approved dietetic internships and for memberships. It prepares the student for administrative and therapeutic dietetics as well as for the teaching of dietetics and for the graduate year in hospital dietetics. Students are also prepared for school lunch, or institutional management if electives are selected properly.

REQUIRED COURSES	HOURS
FDN 306 Foods	5
FDN 350 Advanced Meal Planning and Serving	5
FDN 351 Nutrition	5
FDN 354 Quantity Cookery	5
FDN 372 Institution Management	5
FDN 441 Advanced Nutrition I	5
FDN 442 Advanced Nutrition II	5
FDN 453 Nutrition in Disease	5
FDN 450 Experimental Foods	5
FDN 572 Advanced Institutional Management Practice	5
FDN 574 Food Purchasing	5
BIO 101, 102	10
STA 221 or 200	5
ANT 102	5
CHM 111, 112 or 121, 122	10
CHM 261 or 240, 241	5
ECN 105	5
MIB 350	5
VPH 310 or ZOO 213	5
BCH 310	5
EPY 304	5
ACC 110 or 116	5
PSY 101 or SOC 105	5
MAN 351	5
Electives	5-15

Suggested Electives: FDN 451, 455, 458, MIB 407

Experimental Foods

This major offers training to prepare students for positions relating to consumer education in foods and nutrition and research in food product development and recipe testing. This program also prepares students for graduate study in foods and nutrition. A student may confer with his adviser in the selection of a sequence of electives to meet individual professional interests.

REQUIRED COURSES	HOURS
FDN 306 Foods	5
FDN 350 Advanced Meal Planning and Service	5
FDN 351 Nutrition	5
FDN 451 Evaluation of Food and Food Products	5
FDN 441 Advanced Nutrition I	5
FDN 442 Advanced Nutrition II	5
FDN 450 Experimental Foods	5
FDN 453 Nutrition in Disease	5
FDN 454 Experimental Foods	5
CHM 121, 122	10
CHM 261 or 240, 241	5
MIB 350	5
BCH 310	5
VPH 310 or ZOO 213	5
BIO 101, 102	10
STA 200 or 221	5
FS 407, 409	10
Electives	15-10

Suggested Electives: FDN 426, 455, 574; HFM 364, 500

Food Service Management

The Food Service Management program prepares students for management of school, industrial, nursing home and commercial cafeterias and restaurants.

REQUIRED COURSES	HOURS
FDN 306 Foods	5
FDN 350 Advanced Meal Planning and Service	5

FDN 351 Nutrition	5
FDN 351 Quantity Cookery	5
FDN 372 Institution Management	5
FDN 572 Advanced Institutional Management Practice	5
FDN 574 Food Purchasing	5
HFM 343	5
CHM 111, 112 or 121, 122; 261 or 240, 241	10
MIB 350	5
ZOO 213 or VPH 310	5
STA 221 or 200	5
PSY 101	5
ECN 105	5
ANT 102 or SOC 105	5
EPY 304	5
ACC 110 or 116	5
MAN 351	5
Electives	20-30

Suggested Electives: FDN 451, 419, 500, 450, 454, 301, 391, 441, 442, 453; MIB 407; BCH 310

Nutrition Science

This major is designed to provide basic training in nutrition and related sciences. Students interested in research, college teaching, or administrative positions in nutrition will be prepared for advanced study with this concentration. Selection of appropriate electives permits adaptation of this major to the student's primary interest area.

REQUIRED COURSES	HOURS
FDN 351 Nutrition	5
FDN 441 Advanced Nutrition I	5
FDN 442 Advanced Nutrition II	5
FDN 453 Nutrition in Disease	5
FDN 455 Maternal and Child Nutrition	5
FDN 450 or 454 Experimental Foods	5
FDN 301 Special Problems	5
CHM 121, 122 and 240, 241	20
VPH 310	5
BCH 310	5
BIO 101, 102	10
MAT 116, 101	10
PSY 101 or 322	5
ANT 310	5
Electives	20

Suggested Electives: FDN 306, 350, 426, 451, 458, MIB 350; CHM 280, 280L, 123, 123L, 390, 391; AN 437; FS 409; PCS 127, 128; MAT 253, 254

Housing, Furnishings, and Home Management (HFM)

A grade point average of 2.8 is required for admission to the Housing, Furnishings, and Home Management Department.

Consumer Economics and Family Management

Preparation for careers as a financial counselor, credit counselor, family management specialist, consumer economics specialist working with various Federal and State agencies, Cooperative Extension Service, banks and finance companies, family service agencies, rehabilitation centers, businesses, household applicance companies, publishing houses and other related areas.

REQUIRED COURSES	HOURS
HFM 343 Selection, Use and Care of Household Equipment	5
HFM 364 Principles of Family Economics	5
HFM 367 Family Management Analysis	3
HFM 368 Individual and Family Management	5
HFM 369 Home Management Residence Laboratory	5
HFM 465 Family Consumer Systems	5
Options:	10
HFM 365 Family Well-Being and Economic Conditions	
HFM 464 Family Social and Economic Systems	
HFM 500 Consumer Legislation	
HFM 564 Family Financial Counseling	
HFM 568 Management for Disadvantaged Families	
HFM 570 The Consumer and the Market	
HFM 576 Family Finance	
Concentration A, B, or C	10
A. Consumer Economics Specialist HFM 500, 570	
B. Family Financial Counselor HFM 365, 564	
C. Family Management Specialist HFM 365, 568	
Additional Requirements:	
SPC 256 Discussion Methods or other speech course	5
ECN 105 Principles of Economics I	5
ECN 106 Principles of Economics II	5
SOC 105 Introductory Sociology	5
PSY 101 Elementary Psychology	5
Supporting Course Options:	25

Any courses not taken in major course options or any of the following: ACC 116, ACC 270, ACC 370, ACC 576, CFD 407, CFD 461, CFD 495, ECN 401, ECN 405, ECN 406, FDN 350, FIN 326, FIN 452, MAN 202, MAN 256, MKT 360, MKT 561, PSY 373, SOC 260, SOC 409, SOC 411, SOC 435

Suggested Electives: ACC 116, EAV 401, ECN 401, 545, HFM 301, 391, MAN 202, PSY 373, SOC 411, 409.

Students may earn credit in foreign study programs or other areas with approval of their major adviser.

Furnishings and Interiors

Preparation for work in retailing, mass media or educational fields related to the areas of furnishings and interiors. Emphasis is on the consumer aspects of residential furnishings.

Career opportunities are available: (1) in the processes involved in the production and distribution of goods and services within the home furnishings industries: (2) in the mass media interpreting the home furnishings industry to the consumer and to special interest groups; and (3) aid on a consulting basis.

REQUIRED COURSES	HOURS
HFM 343 Household Equipment	5
HFM 364 Family Economics	5
HFM 375 Home Planning and Furnishings	5
HFM 378 Interior Perspective and Media	5
HFM 386 Introductory Housing	5
HFM 475 Historic Homes and Furnishings	5
HFM 477 Contemporary Home Furnishings	5
HFM 478 Fabrics for Furnishings and Interiors	5
HFM 547 Residential Lighting	5
ART 120 or 230 Basic Design	5
ART 300 Appreciation	5
CLT 360 Advanced Textiles	5
CHM 111 Elementary Chemistry with lab	5
ECN 105 Principles of Economics	5
PSY 101 Elementary Psychology or SOC 105 Introductory Sociology	5
HFM Elective	5
ART, HFM, EAV, HOR, Foreign Language electives	10
Additional Courses (free electives)	19
Concentration A, B, or C	20

A. Retailing and Marketing in Furnishings and Interiors
ACC 116, MKT 360, MKT 560, HFM 572
B. Mass Media in Furnishings and Interiors
JRL 201, 204, 260, 280
C. Educational Emphasis
HFM 368, 369, 575; EAV 501

Students may earn credit in foreign study programs or other areas with approval of their major professor.

Home Economics and Interior Design

The major in home economics and interior design is offered jointly by the School of Home Economics and the Department of Art. It is designed to provide specialization in interior design with background in housing and textiles.

Career opportunities are available in commercial interior design firms, architectural firms, retail establishments and self employment.

REQUIRED COURSES	HOURS
HFM 364 Family Finance	5
HFM 375 Home Planning & Furnishings	5
HFM 477 Contemporary Home Furnishings	5
HFM Electives	15
ART 120, 130, 230 Basic Design	15
ART 300 Appreciation	5
ART 386A, 386B, 387A, 387B, 387C, 388A, 388B, 391 or 392 Interior Design	40
CLT 360 Advanced Textiles	5
CHM 111 Elementary Chemistry with lab	5
ECN 105 Economics	5
PSY 101 Elementary Psychology or SOC 105 Introductory Sociology	5
ART, HFM, HOR, Foreign Language elective or options	10
Additional courses (free electives)	19

Students may earn credit in foreign study programs or other areas with approval of their major adviser.

Housing

This major provides training for careers in home services, management of multi-unit or public housing projects, and assistance to architects, designers, household appliance companies, and utilities.

REQUIRED COURSES	HOURS
HFM 343 Selection, Use and Care of Household Equipment	5
HFM 364 Principles of Family Economics	5
HFM 368 Individual and Family Management	5
HFM 369 Home Management Residence Laboratory	5
HFM 375 Home Planning and Furnishings	5
HFM 386 Introductory Housing	5
HFM 391 Internship	5
HFM 480 Housing Developments	5
HFM 487 Housing Design Principles	5
ART 120 Basic Design or ART 300 Art Appreciation	5
CHM 111 Elementary Chemistry with lab	5
ECN 105 Principles of Economics	5
ENV 400 Man and the Physical Environment	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
SOC 435 The Community or SOC 443 Social Mobility	5
SPC 108 Fundamentals of Speech or SPC 210 Voice and Diction	5
STA 200 Elementary Statistics or STA 221 Introduction to Statistics and Programming I	5

Options:	15
HFM 546 Household Equipment Testing	
HFM 547 Residential Lighting	
HFM 568 Management for Disadvantaged Families	
HFM 571 Furnishings and Interiors for Low-Income Housing	
(Others approved by adviser.)	
Related Concentration:	15
1. Adult Education	
2. Art	
3. Environmental Design	
4. Sociology	
5. Real Estate	
6. Any area of Home Economics outside major	
Additional Courses (free electives)	15

Home Economics Education

The major in home economics education is offered jointly by the School of Home Economics and the College of Education. It fulfills the requirements for teaching in both vocational and non-vocational home economics departments of Georgia high schools. The graduate in this program is qualified to receive a four year professional certificate.

REQUIRED COURSES	HOURS
Clothing and Textiles (CLT)	
122, Construction	3
321, Advanced Clothing	5
Child and Family Development (CFD)	
395, Child Development	5
495, Contemporary Family	5
Foods and Nutrition (FDN)	
306, Foods	5
351, Nutrition	5
350, Advanced Meal Planning and Serving	5
Housing and Home Management (HFM)	
343, Selection, Use, Care, of Household Equipment	5
364, Principles of Family Economics	5
368, Individual and Family Management	3
369, Home Management Residence Laboratory	5
Education	
Educational Psychology 305, Adolescent Psychology	5
Home Economics Education 335, Curriculum Planning	5
Home Economics Education 336, Teaching Procedures	5
Home Economics Education 345 School Practicum	2
Home Economics Education 546—7—8 Apprentice Teaching	15
Electives	23
Selected from one area of Home Economics	15
Other	8

Home Economics and Journalism

The major in home economics and journalism is offered jointly by the School of Home Economics and the School of Journalism. It is designed to prepare students for journalistic work related to home economics with advertising, public relations, newspapers, magazines and radio-television.

REQUIRED COURSES	HOURS
SPC 108 Speech or SPC 210 Voice and Diction	5
CHM 111 Elementary Chemistry with lab or CHM 121 General Chemistry with lab	5
ECN 105 Principles of Economics	5
PSY 101 Introductory Psychology	5
ART 120 Basic Design or ART 300 Appreciation	5
CFD 395 (Psychology) Introduction to Child Development	5
CLT 122 Construction	3
FDN 350 Advanced Meal Planning and Service	5
HFM 343 Household Equipment	5
HFM 364 Family Economics	5
JRL 101 Mass Communications I: Survey	5
JRL 204 Mass Communications III: Writing Workshop	5
Select 30 hours from one of the following sequences:	30
1. Advertising: JRL 260, 557, 575, 576 and 2 related journalism courses approved by adviser	
2. Magazines: JRL 260, 351, 558 and 3 related journalism courses approved by adviser	
3. Newspapers: JRL 260, 351, 460 and 3 related journalism courses approved by adviser	
4. Public Relations: JRL 260, 352, 577 and 3 related journalism courses approved by adviser	
5. Radio-Television: JRL 115, 260, 380 and 3 related journalism courses approved by adviser	
Select 10 hours from another sequence listed above	10
Select 15 hours from one or two departments: CFD, CLT, FDN, HFM	15
Electives	17

Combined Major Programs

Four combined major programs are offered in which students attain the requirements for a double major as well as meet the course requirements for certification for the public school system. Thus, an individual attains a degree which permits more diverse employment and career opportunities.

Clothing and Textiles—Home Economics Education

This combined major prepares students for certification for teaching in the public school system in addition to courses related to the clothing field.

REQUIRED COURSES	HOURS
CLT 122 Construction	3
CLT 321 Advanced Construction	5
CLT 360 Advanced Textiles	5
CLT 561 Clothing and Textile Economics	5
CLT Options	20
CFD 395 Introduction to Child Development	5
CFD 495 Contemporary Family	5
FDN 350 Advanced Meal Planning and Service	5
FDN 306 Foods	5
FDN 351 Nutrition	5
HFM 343 Household Equipment	5
HFM 364 Family Economics	5
HFM 368 Individual and Family Management	5
HFM 369 Home Management Residence Laboratory	5
EHE 345a School Practicum	1
EHE 345b School Practicum	1
EHE 335 Curriculum Planning	5
EHE 336 Teaching Procedures	5
EAV 401 Basic Instructional Media	3
EHE 546 Apprentice Teaching	5
EHE 547 Apprentice Teaching	5
EHE 548 Apprentice Teaching	5
HED 171 Personal Health Problems	3
EXC 500 Introduction to Exceptional Children	5
EPY 305 Adolescent Psychology	5
MKT 360 Principles of Marketing	5

Consumer Economics—Family Management and Home Economics Education

The combined major in Consumer Economics—Family Management and Home Economics Education prepares students for careers in teaching family and consumer economics and management in high schools and in continuing education programs. It also prepares consumer affairs professionals for community agencies and commercial enterprises.

REQUIRED COURSES	HOURS
HFM 343 Selection, Use and Care of Household Equipment	5
HFM 364 Principles of Family Economics	5
HFM 367 Family Management Analysis	3
HFM 368 Individual and Family Management	5
HFM 369 Home Management Residence Laboratory	5
HFM 465 Family Consumer Systems	5
Options:	10
HFM 365 Family Well-Being and Economic Conditions	
HFM 464 Family Social and Economic Systems	
HFM 500 Consumer Legislation	
HFM 564 Family Financial Counseling	
HFM 568 Management for Disadvantaged Families	
HFM 570 The Consumer and the Market	
HFM 576 Family Finance	
Concentration A, B, or C	10
A. Consumer Economics Specialist HFM 500, 570	
B. Family Financial Counselor HFM 365, 564	
C. Family Management Specialist HFM 365, 568	
Additional Requirements:	
SPC 256 Discussion Methods or other speech course	5
ECN 105 Principles of Economics I	5
ECN 106 Principles of Economics II	5
CLT 122 Construction	3
CLT 321 Advanced Clothing	5
CFD 395 Introduction to Child Development	5
FDN 306 Foods	5
FDN 350 Advanced Meal Planning and Service	5
FDN 351 Nutrition	5
EPY 305 Adolescent Psychology	5
EAV 401 Basic Instructional Media Competencies	3
EHE 345a School Practicum	1
EHE 345b School Practicum	1
EHE 335 Curriculum Planning	5
EHE 336 Teaching Procedures	5
EHE 546–7–8 Apprentice Teaching	15
HED 171 Personal Health Problems	3
EXC 500 Introduction to Exceptional Children	5
CHM 111 Elementary Chemistry with Lab	5
CHM 261 Organic Chemistry	5
Supporting Course Options:	20
Any courses not taken in major course options or any of the following: ACC 116, 270, 370, 576, CFD 407, 461, 495, ECN 401, 405, 406, FDN 350, FIN 326,	

451, 452, MAN 202, 256, MKT 360, 561, PSY 373, SOC 260, 409, 411, 435

Students may earn credit in foreign study programs or other areas with approval of their major adviser.

Furnishings and Interiors and Home Economics Education

The combined major in Furnishings and Interiors and Home Economics Education, primarily prepares students for careers in teaching in the public school system and in continuing education programs. Additionally, it prepares home furnishings professionals for commercial enterprises.

REQUIRED COURSES	HOURS
HFM 343 Household Equipment	5
HFM 364 Family Finance	5
HFM 368 Individual and Family Management	5
HFM 369 Home Management Residence Laboratory	5
HFM 375 Home Planning and Furnishings	5
HFM 378 Interior Perspective and Media	5
HFM 386 Introductory Housing	5
HFM 475 Historic Homes and Furnishings	5
HFM 477 Contemporary Home Furnishings	5
HFM 478 Fabrics for Furnishings and Interiors	5
HFM 547 Residential Lighting	5
ART 120 or 230 Basic Design	5
ART 300 Appreciation	5
CHM 111 Elementary Chemistry with lab	5
CHM 261 Organic Chemistry	5
ECN 105 Principles of Economics	5
PSY 101 Elementary Psychology or SOC 105 Introductory Sociology	5
HFM Elective	5
CLT 122 Construction	3
CLT 321 Advanced Clothing	5
CLT 360 Advanced Textiles	5
CFD 395 Introduction to Child Development	5
CFD 495 Contemporary Family	5
FDN 306 Foods	5
FDN 350 Advanced Meal Planning and Service	5
FDN 351 Nutrition	5
EPY 305 Adolescent Psychology	5
EHE 335 Curriculum Planning	5
EHE 336 Teaching Procedures	5
EHE 345a School Practicum	1
EHE 345b School Practicum	1
EHE 546–7–8 Apprentice Teaching	15
HED 171 Personal Health Problems	3
EAV 401 Basic Instructional Media Competencies	3
EXC 500 Introduction to Exceptional Children	5

Students may earn credit in foreign study programs or other areas with approval of their major adviser.

Housing and Home Economics Education

This combined major fulfills the requirements for teaching in both vocational and non-vocational home-making departments of the public school system. The graduate in this program is qualified to receive a four year professional certificate.

The housing major provides training for careers in home services, management of multi-unit or public housing projects, and assistance to architects, designers, household appliance companies, and utilities.

REQUIRED COURSES	HOURS
HFM 343 Household Equipment	5
HFM 364 Family Finance	5
HFM 368 Individual and Family Management	5
HFM 369 Home Management Residence Laboratory	5
HFM 375 Home Planning and Furnishings	5
HFM 386 Introductory Housing	5
HFM 391 Internship	5
HFM 480 Housing Developments	5
HFM 487 House Design Principles	5
ART 120 Basic Design or ART 300 Appreciation	5
EAV 400 Man and Physical Environment	5
ECN 105 Principles of Economics	5
PSY 101 Elementary Psychology	5
SOC 105 Introductory Sociology	5
SOC 435 The Community or SOC 443 Social Mobility	5
SPC 108 Fundamentals of Speech Communication or SPC 210 Voice and Diction	5
STA 200 Elementary Statistics or STA 221 Introduction to Statistics and Programming I	5
CHM 111 Elementary Chemistry with Lab	5
CHM 261 Elementary Organic Chemistry with Lab	5
CLT 122 Construction	3
CLT 321 Advanced Clothing	5
CFD 395 Introduction to Child Development	5
CFD 495 Contemporary Family	5
FDN 306 Foods	5
FDN 350 Advanced Meal Planning and Serving	5
FDN 351 Nutrition	5
EPY 305 Adolescent Psychology	5
EHE 335 Curriculum Planning	5
EHE 336 Teaching Procedures	5
EHE 345a School Practicum	1
EHE 345b School Practicum	1

HED 171 Personal Health Problems	3
EAV 401 Basic Instructional Media Competencies	3
EXC 500 Introduction to Exceptional Children	5
EHE 546 Apprentice Teaching	5
EHE 547 Apprentice Teaching	5
EHE 548 Apprentice Teaching	5

THE HENRY W. GRADY SCHOOL OF JOURNALISM AND MASS COMMUNICATION

ADMINISTRATIVE OFFICERS

Scott M. Cutlip, B.A., M.Ph., Litt.D., *Dean*
J. Thomas Russell, A.B.J., M.S., Ph.D., *Assistant Dean*

GENERAL INFORMATION

Mission

It is the mission of the Henry W. Grady School of Journalism to:

(1) Offer undergraduate instruction regarding the collection, preparation and presentation of ideas and information for dissemination through the mass media. Specifically, undergraduates will be provided opportunities (a) to prepare for careers within the mass media industries and (b) to understand and appreciate the operation, function, and significance of mass media in contemporary society with emphasis on the role of free and responsible media in a democracy.

(2) Offer instruction at the graduate level, leading to the Master of Arts degree and, as soon as feasible, the Doctor of Philosophy degree. Graduate students will be given opportunities to continue their professional and undergraduate experience in the practice, management, and critical evaluation of the mass media. The graduate program will be oriented to the academic needs of the professional communicator, the policy maker, the communication researcher, and the teacher.

(3) Develop through research and practice a body of knowledge appropriate to our instructional missions and a faculty who will extend the frontiers of knowledge and make this knowledge accessible to students, other scholars, professionals in the media, and to the public, and who will monitor the performance of the communications field.

(4) Provide the media, especially in Georgia, with a program of service which will (a) contribute to the state of knowledge about the mass media, (b) assist the media in maintaining their economic stability, and (c) foster efforts by the media to provide maximum public service in the interest of a prosperous economy and an effective democracy.

(5) Aid citizens to understand, use, and evaluate the media more effectively.

Facilities

The School of Journalism is housed in a modern multimillion dollar communications center which provides some of the best instructional facilities available. Included are classrooms with closed circuit color television sets, two large theater-style auditoriums, newspaper and broadcast news facilities, advertising and graphics laboratories, color-equipped television studios, modern radio studios, photographic laboratories, film production and processing facilities, an electronic news editing laboratory, and ample classroom space.

Accreditation

The four programs of the School are accredited by the American Council of Education for Journalism. These programs are advertising, news-editorial, public relations, and radio-television-film.

Degree Offered

The School of Journalism offers the undergraduate degree of Bachelor of Arts in Journalism (A.B.J.).

Undergraduate Admission

The academic program of students seeking the A.B.J. degree consists of two parts: (1) pre-journalism program taken during the freshman and sophomore years at either the University of Georgia or another institution and (2) the professional program completed during the junior and senior years in the School of Journalism. Pre-journalism students at the University of Georgia are enrolled in the College of Arts and Sciences.

Students presenting the highest qualifications will be accepted into the School each of the four quarters of the academic year. The number which can be accommodated will be determined by availability of staff and facilities.

Students may apply after completing 60 quarter hours of work (not including physical education), but will not be enrolled until the completion of 90 academic hours.

The basis of selection will be cumulative grade point average (minimum of 2.50), satisfactory score on the English Expression Test (Cooperative English Tests) of the Education Testing Service, completion of the pre-journalism program, and fulfillment of special requirements (U.S. Constitution, Georgia Constitution, U.S. and Georgia History, basic English average, Regents Examination, physical education, and typing). If a student has substantially completed the pre-journalism program and the special requirements, but still has requirements unfilfilled (e.g., he/she may have one or two pre-journalism courses remaining due to having completed some basic journalism courses), he/she may be accepted in a provisional status for completion of the requirements during the first quarter in residence.

University of Georgia students will submit their applications directly to the Office of Undergraduate Student Services, School of Journalism. Students desiring to transfer from other institutions should apply through the University of Georgia Office of Admissions.

The English Expression and typing tests are given on the University of Georgia campus at specified times each quarter. The English Expression Test may be taken at other colleges.

Readmission

Undergraduate students who are out of the university for one or more quarters (exclusive of the Summer Quarter) must make application for readmission at least 20 days prior to the published date of the first day of classes for the quarter in which the student intends to enroll. Readmission forms may be obtained from the Office of Admissions.

Graduate Study

The degree of Master of Arts with a major in journalism is offered by the Graduate School. Refer to the Graduate School Bulletin for further information.

Second Degree Program

A student who holds a baccalaureate degree from an institution accredited by a regional accrediting association and who has earned a cumulative grade point average of not less than 2.50 on a 4.0 scale may apply for admission as a candidate for a second bachelor's degree. Upon satisfactory completion of the 55-quarter-hour program of study the student will be awarded the degree of Bachelor of Arts in Journalism (A.B.J.).

If the student earned the bachelor's degree at an institution other than the University of Georgia, he/she must file an application and submit official transcripts of all previous college work to the Director of Admissions of the University of Georgia. In addition, a letter of application and suggested program of study must be submitted to the Office of Undergraduate Student Services, Henry W. Grady School of Journalism. The applications and transcripts must be received no later than the last day of the first month of the quarter prior to the one in which the person wants to enter the program.

A University of Georgia graduate, whose major was in a field other than one offered by the School of Journalism, may apply for the program. If the student has been out of school for any quarter other than the previous summer, a readmission application must be filed with the Director of Admissions. In addition, a letter of application and suggested program of study must be submitted to the Office of Undergraduate Student Services, Henry W. Grady School of Journalism, no later than the last day of the first month of the quarter prior to the one in which the person wants to enter the program.

A student who has been accepted into the graduate program and who is later dismissed for academic reasons may apply for admission to the second degree program only after one quarter has elapsed between the quarter of dismissal and the quarter of application. Such applicant must have a cumulative grade point average of not less than 2.50 on a 4.0 scale, including his/her undergraduate work and courses attempted in the graduate program. The application and suggested program of study must be submitted to the Office of Undergraduate Student Services, Henry W. Grady School of Journalism, no later than the last day of the first month of the quarter prior to the one in which the person wants to enter the second degree program. If the student is accepted into the second degree program, those courses taken as graduate only (800 and above) shall not be counted toward the second degree. Other course work completed during the student's residence in the graduate program may be applied to the requirements of the second degree only by approval of the School of Journalism Executive Committee. Further, the student must have had the proposed program of study approved before enrolling for any additional work in the program. In no case will more than 20 quarter hours of previously completed study be applied to the requirement for the degree. If the student is accepted, he must coordinate the filing of a readmission application and change of school/major form with the Director of Admissions of the University of Georgia and the Office of Undergraduate Student Services of the School of Journalism.

All applications and programs of study for the second degree must be approved by the Executive Committee of the School of Journalism. The proposed program of study must be prepared in consultation with the sequence in which the student plans to major.

The letter of application must include the prospective student's full name, social security number, previous major, desired major, a list of all former colleges attended, title of first degree, date awarded, overall grade point average, date student desires to enter the second degree program, and reason(s) for wanting to participate in the program. The student may include any additional information he/she desires.

The student admitted to the second degree program must apply for graduation during the first quarter of study and complete the checkout for graduation during the second quarter in residence.

A student with no previous journalism course credit will be expected to complete a 55-hour program of study in courses offered by the School of Journalism. A student who presents evidence of satisfactory completion of courses similar to those offered in the School of Journalism will still be required to complete a 55-hour program but will substitute courses in the humanities and/or social sciences for up to 15 quarter hours of journalism.

In addition, all second degree candidates must meet the general university requirements, including the history, constitution, and Regent's examinations. Further, the student must meet the School of Journalism typing requirement.

Irregular, Transient Students

In addition to second degree candidates, certain other students may be admitted as irregular students. These persons, while in this status, are not candidates for a degree. Usually they are persons who have received bachelor's degrees and desire to take additional work or special students enrolling for a limited time period, such as many international students. These persons normally are not assigned an academic adviser, but register through the Office of Undergraduate Student Services. Only those persons who have earned a cumulative grade point average of 2.50 will be admissible as an irregular student.

Transient students are those who are candidates for a degree at another institution but are admitted for one quarter's work at the university with the idea of transferring the credits to the parent institutions. These students are not assigned advisers and should register through the Office of Undergraduate Student Services.

Undergraduate Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students at the university as set down in the general information section of this catalog.

Hours and Residency

Journalism students must successfully complete a minimum of 195 quarter hours, including physical education. Physical education carries one academic hour of credit each quarter, up to six quarters.

All students must have a minimum of 90 quarter hours in residence at The University of Georgia to graduate. *No more than 55 hours of the 195 needed for graduation may be taken in journalism courses.* (The maximum is 50 hours in journalism courses for students entering college Fall 1976 or later.)

No more than 20 hours of journalism credit earned prior to a student's enrollment in the School of Journalism at the University of Georgia may be applied toward the satisfaction of requirements for the A.B.J. degree. This includes journalism courses taken both at the University of Georgia and at other institutions.

A student may use up to 10 quarter hours of credit in journalism received from a junior college or 20 quarter hours of credit received from a four-year college toward meeting the journalism course requirement for the A.B.J. degree at the University of Georgia. In no case will a non-journalism student be allowed to take more than 20 hours of journalism courses.

Grades

Journalism students are required to maintain grades of 2.0 or better in all journalism courses, and must obtain a cumulative average of 2.0 or better on all work done at the university in order to graduate. In addition, the student must not have grades below 2.0 in more than ¼ of the total of quarter hours earned.

Re-Examinations

The School of Journalism will not authorize a senior re-examination in any course offered by the School except during a senior's graduating quarter and then only if the final examination is the reason for making the insufficient grade. The dean's office must recommend the re-examination.

Course Challenges

If a student feels that he/she has, outside the classroom, mastered the work in a specific course, he/she may challenge it for credit, if it has been designated by the college, school, or department concerned as a course which can be challenged. The student should discuss the matter with an official of the college, school, or department concerned. If the student then desires to challenge, he/she must obtain a University of Georgia Course Challenge Form from the School of Journalism Office of Undergraduate Student Services, have the form signed by his/her academic adviser, and submit it to the office administering the examination.

The following journalism courses may be challenged for credit or exemption (without credit): 260, 280, 301, 351, 352, 402, 405, 460, 511, 512, 543, 557, 558, 577, and 586. Exemption carries no credit or grade, but is put on record in the student's file and the student is allowed to take other work in lieu of the course. If a student challenges a journalism course for credit and is successful, a grade of A to D will be recorded on his transcript; if he/she fails, a grade of F is recorded.

If the student desires to challenge a journalism course, he/she should first discuss the challenge with the proper official (Mass Communication Core coordinator, major sequence head, or assistant); then, if the student decides to challenge, he/she obtains the challenge form from the School of Journalism Office of Undergraduate Student Services and has his/her adviser approve the challenge. This may be done only during the first week of pre-registration each quarter. During the second week the student must submit the form to the Mass Communications Core coordinator (for Journalism 280 and 352) or the proper sequence official (head for the News-Editorial and Advertising-Public Relations Sequences and assistant head for the Radio-TV-Film Sequence). If the student desires exemption (without credit) he/she must write "Exemption" at the top of the form.

The requirements for challenging various courses differ, but may include review of the student's work, a practical examination, a written test, and an oral examination.

Students may not attempt to challenge a course both for credit and exemption, a course may be challenged only once, and a student may not challenge a course if he/she has previously received a grade other than withdrawal ("W") in the course.

School of Journalism courses may be challenged by any student who is a University of Georgia degree candidate and who is enrolled for resident course work at the time of the challenge examination.

Academic Advising

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Certain printed material and the School's academic advising program are available to assist the student.

Each student in the School of Journalism is assigned to an academic adviser. Juniors and seniors are assigned to advisers in the student's major sequence. Pre-journalism students in the College of Arts & Sciences are assigned to lower division advisers in the School of Journalism.

Miscellaneous

English 101–102: A grade of "C" (2.0) or better must be received in English 101 and the 101–102 average must be at least 2.0.

Typing: Each student must demonstrate a typing proficiency before enrolling in any journalism courses numbered 204 and above. The requirement may be met in one of two ways: He may (1) pass a typing test administered by the School (40 words per minute for three minutes with a total of no more than five errors) or (2) enroll in and complete Business Education 303 with a grade of "C" or better. A student may take a retest only if he shows evidence of formal training in typing between the first and second tests.

Cross–Listed Courses: For a student in the School of Journalism to receive credit toward the 195 hours required for graduation for a course cross-listed between journalism and another discipline, he/she must enroll under the Journalism (JRL) prefix. The course will count in the hours of journalism credit required for the degree.

Graduate Courses: Only in a few exceptional cases are undergraduate students eligible for enrollment in graduate courses (numbered 600, 700, 800, 900). If the course is offered on both levels, the undergraduate student should be careful to register for the lower-numbered course (numbered 400, 500). No credit will be awarded to undergraduates for enrollment in graduate courses.

Petitions: Any student desiring a waiver in rules or curriculum requirements may submit a petition. Each sequence has a committee to consider variations to the established minors. Only the School's Executive Committee may grant exceptions to the School's rules and curriculum. Also, this committee must make a recommendation before the University's Educational Affairs Committee will consider petitions concerning university rules and requirements.

The student prepares the petition on a form obtained from the Office of Undergraduate Student Services. If the request pertains to the minor, the student submits it to the sequence head for transmittal to the sequence committee on the minor. If it pertains to School of Journalism or university matters, it is submitted to the Office of Undergraduate Student Services.

Following action on the petition, the student is notified by letter; a copy is filed in the student's record in the Office of Undergraduate Student Services and one is sent to the student's academic adviser.

Dismissals: Students who are placed on first or second dismissal must avail themselves of the services of the Counseling and Testing Center (Academic Building) before petitioning for readmission. The recommendation of the Center will be taken into consideration in arriving at the readmission decision.

Programs for Superior Students

In order to encourage superior academic achievement, the School of Journalism endeavors to identify, recruit, and assimilate into the university's academic life students with outstanding academic potential.

These students, working with their academic adviser, often are able to develop programs of study which have greater flexibility and include advanced courses.

Advanced Placement

Students who enter the university with outstanding records often receive advanced placement because of high scores on the College Entrance Examination Board, the university's advanced placement examinations, and other tests.

The student may exempt a course and be eligible for placement in an advanced course in the respective subject, meet a degree requirement through exemption and be allowed to substitute an elective, or may receive academic credit for the particular course, thus allowing him to do more advanced work and finish his degree requirements more rapidly.

Honors Program

Qualified students, upon invitation, are urged to participate in the University Honors Program. Most of the courses are offered in the College of Arts and Sciences, but academic advisement is provided by the School of Journalism.

Almost all of the courses in the pre-journalism core curriculum are available as honors courses. A number of senior division course opportunities are available for honors students, including three independent reading and/or projects courses and an honors thesis course offered by the School of Journalism. In these courses a student may pursue independent study under the personal guidance of a professor whose specialty is of particular interest to the student.

Students interested in independent study should refer to the Programs for Superior Students handbook and consult with the Journalism Honors Adviser. Juniors and seniors who are not in the Honors Program, but who meet the same cumulative academic average requirement as honors students, may qualify for independent study. They should consult with the Journalism Honors Adviser.

Normally students enter the Honors Program in their freshman year; however, others may begin participation at any time they qualify. Interested students transferring to the University should inquire about opportunities available to them.

Students in the School of Journalism may qualify for the Junior Division Honors Program Certificate and for Graduation with General Honors.

Honors courses usually are taught in small sections by senior professors, are enriched in content, and are presented at the level of students of superior ability. In some cases, one course will meet a two-course requirement.

Qualified honors students may, with proper approval, participate in graduate courses. Upon successful completion of the course, credit toward the bachelor's degree (not graduate credit) shall be awarded, and will count for honors credit if a grade of "B" or higher is received. Joint listed (undergraduate-graduate) courses are not included in this provision unless the classes are taught separately and the student is enrolled in the separate graduate section of the course.

Area Study Major

Honors students in the School of Journalism may participate in the University Honors Program's area study major.

An area study major is designed to allow an honors student to build his own integrated program of coherently defined interdisciplinary courses. The area of study may be on a chronological, geographical or subject matter basis or consist of any other logical and cohesive program. It consists of a minimum of 50 hours.

Interested students should contact the Journalism Honors Adviser.

Further Information

Additional information about the Programs for Superior Students may be obtained by contacting that office (209 Academic Building) or the Honors Adviser in the School of Journalism. Also, see the general information on the Programs for Superior Students in this bulletin.

Internship and Cooperative Study

Under the internship plan, qualified students are given the opportunity to serve an internship with the media or business organizations throughout the region and nation. Such an internship is considered highly beneficial to a student's total educational experience.

The student receives five credit hours for successfully completing the following internship requirements:

A. Internships must be approved in advance by the student's sequence head. A written request must be submitted by the student, to include a job description, length of internship, name of supervisor(s) and rate of pay. A letter verifying the internship must be submitted by the prospective employer.

B. To be eligible to serve on internship for credit, a student must have completed the Communications Core and Sequence Core.

C. Internships must cover a minimum of eight weeks of fulltime employment. Under exceptional circumstances, students may petition for waiver of this requirement.

D. Students who participate in internships must register for JRL 300.

E. A written report must be filed by the employer at the end of the internship, describing the duties performed and the quality of the student's work.

F. Each sequence may impose such other administrative and scholastic requirements as it deems necessary for fulfillment of a satisfactory internship.

If a student receives internship credit, it becomes a journalism elective and must be included in the total hours in journalism courses for the A.B.J. degree.

The cooperative study plan allows two students to alternate university study and employment in the field quarter by quarter.

Graduation Information

Each quarter the Registrar's Office sends an application for graduation form to every student who has completed 135 hours of credit but has not applied for graduation. Students are urged to complete the application immediately and follow the procedures and deadlines that both the University Graduation Office and the School of Journalism Office of Undergraduate Student Services have for graduation check-out. Taking care of these matters during the first quarter after achieving 135 hours will permit students to identify and solve most problems that could delay graduation. Journalism students should check the bulletin board outside the Office of Undergraduate Student Services (Room 201) for detailed graduation instructions.

Journalism students must meet all of the university requirements, as well as those of the School of Journalism, in order to graduate. Exceptions can be granted only by the School's Executive Committee and/or the University Educational Affairs Committee.

Job Placement

The School of Journalism maintains, through its own office of placement services and in cooperation with the University's Office of Career Planning and Placement, services to assist students and graduates in locating jobs, part-time while in school and on a permanent basis after graduation. Work opportunities occur with radio stations, television stations, advertising and public relations agencies, newspapers, magazines, and industrial publications, among others. Students, prospective students or graduates should contact the coordinator of placement services in the Journalism Building.

Each year an employment prospectus is published containing pertinent information about graduating seniors, and graduate students interested in full-time employment as well as undergraduates interested in internships. The booklet is mailed to prospective employers throughout Georgia and in other regions as well.

A number of representatives of the mass media and industry interview students on the university campus each year. Notices of interviews conducted at the university's Office of Career Planning and Placement are posted in Clark Howell Hall and on the placement bulletin board in the Journalism Building. Notices of interviews conducted in the Journalism Building are posted on the bulletin board in that building. Placement services are available only to Equal Opportunity Employers.

Other Opportunities for Experience

University students, including many in the School of Journalism, avail themselves of opportunities for gaining practical experience by working on the staffs of *The Red and Black*, student daily newspaper; *The Pandora*, student yearbook; *The Impression*, student magazine; *The Georgia Agriculturist*, student magazine; other campus publications; and WUOG, student FM radio station. *The Red and Black*, and WUOG are under the general supervision of the Board of Student Communications, composed of students, faculty, and administrators from various segments of the campus.

The School of Journalism offers reporting, writing, editing, and production experience through class-related laboratories. An electronic editing lab with video display terminals and tie-in to UPI's computerized information storage and retrieval system were made possible by a grant from the James M. Cox Foundation in 1976. The school also has an extensive photography laboratory made possible by the Gannett Foundation in 1974, as well as laboratories for graphics and for radio, television, and film production. A laboratory newspaper, *The Grady Gazette*, is produced quarterly in conjunction with print-oriented classes.

Other opportunities for practical experience are provided through employment by the Instructional Resources Center, a university-wide facility housed in the Journalism-Psychology Complex, as well as by other university divisions. Some journalism students also find employment with newspapers, broadcast stations, and media-related divisions of companies in northeast Georgia.

Alumni Relations

University alumni relations are augmented for journalism graduates by the Journalism Alumni Association, *Journalism AlumNews* (a newsletter issued three times a year), and special activities. A journalism faculty member serves as coordinator of alumni relations.

Special Services and Institutes

The School of Journalism offers students more than classroom instruction. Each year numerous institutes, conferences, and special occasions bring together students, faculty and communications leaders of the region and nation, making possible a blending of the service and instructional functions of the School.

Among the annual events are the Georgia Press Institute, a co-sponsored by the Georgia Press Association; Georgia Radio and Television Institute, co-sponsored by the Georgia Association of Broadcasters; Georgia Association of Newscasters Workshop; and conventions of the Georgia Collegiate Press Association, the Georgia Scholastic Press Association, and the Georgia Association of Journalism Directors. The Georgia Center for Continuing Education on the university campus also co-sponsors the institutes.

Since 1940 the School of Journalism has administered the prestigious George Foster Peabody Radio and Television Awards program. From more than 600 entries received each year, screening committees and a National Advisory Board select 15 to 20 programs and individuals as deserving of recognition. Medallions and certificates are awarded at a luncheon meeting in New York City, sponsored by Broadcast Pioneers and attended by several hundred leading broadcast executives of the nation. The awards are considered "the Pulitzer Prizes" of the broadcast world and "the goal of every writer, producer, and performer in radio and television." The entries are retained by the School of Journalism and are being processed for scholarly access in the University Libraries. More than 11,000 broadcast programs comprise this unique national treasure.

Advisory Board

An advisory board, consisting of 21 national, regional, and state media and business leaders, promotes the recognition and welfare of the School of Journalism. The Board convenes semiannually on the university campus.

REQUIREMENTS FOR THE BACHELOR OF ARTS IN JOURNALISM DEGREE

For students entering college Fall 1976 and later

	HOURS
Humanities	40
Mathematics and Natural Science	20
Social Science	30
TOTAL—Pre-Journalism Core Curriculum	90
Communications Core Curriculum	5
Major Sequence	45
Minor	30
Physical Education	5–6
Non-Journalism electives	19–20[1]
TOTAL	195

Explanation of Pre-Journalism Core Curriculum Requirements

		HOURS
HUMANITIES		40
English 101–102	10	
Literature—Any two of the following: English 131, 132; Comparative Literature 121, 122; Classical Culture 120, 121; Spanish 205, 206; Greek 500; Latin 500; Russian 401, 402; French and Spanish 211, 310, 311, 312; German 201, 202; Italian 310, 311	10	
Foreign Language: French, German, Italian, Russian, or Spanish 101, 102, 103; Greek, Hebrew, or Latin 201, 202, 203; or Japanese 401, 402, 403	15	
Humanities: French 104; German 104; Greek 304; Hebrew 204; Italian 104; Japanese 404; Latin 304; Russian 104; Spanish 104; Philosophy 104; Religion 115; Art 300; Drama 300; Music 300; Fine Arts 300	5	
MATHEMATICS AND NATURAL SCIENCE		20
Mathematics (at least 5 hours required): Mathematics 100, 101 or 116, 105, 106, 253, 254	5	
Lab Science (two-course sequence): Biology 101–102; Botany 121–122; Chemistry 111–112, 121–122; Physics 127–128, 137–138; Geography 120, 121, 122; Geology 125–126	10	
Math/Science: Geography 104; Physics 101; Philosophy 258; Statistics 200, 221, 500; or an additional math course from above list	5	
SOCIAL SCIENCE		30
American Government Political Science 101	5	
American History History 251, 252	5	
History (any course 111–399)	5	
Economics Economics 105, 545	5	
Social Science: Anthropology 102; Economics 106, 546; Speech 108; Geography 101, 102; Psychology 101, 258; Sociology 105, 260	10	

(See journalism curriculum requirements in Area V.)

For students entering college prior to Fall 1976

		HOURS
Area I	Humanities	20
Area II	Mathematics and Natural Science	20
Area III	Social Science	20
Area IV	Courses Related to Major	30
	TOTAL—General Core Curriculum	90
	Communications Core Curriculum	0–10[2]
	Major Sequence	45
	Minor	30
	Physical Education	5–6
	Non-journalism electives	14–24[3]
	TOTAL	195

Explanation of General Core Curriculum Requirements

(For general information on the core curriculum, see the General Information section of the University Catalog, under the listing *The Core Curriculum.*)

		HOURS
Area I[4] HUMANITIES		20
English 101–102	10	
Literature[5]—Any two of the following: Comparative Literature 121, 122; English 131, 132; French, German, Italian or Spanish 201, 202	10	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Mathematics (at least 5 hours required) from: Mathematics 100, 101 or 116, 105, 106, 253, 254	5	
Science (at least one 10-hour sequence required): Biology 101–102; Botany 121–122; Chemistry		

111–112, 121–122; Geography 120, 121, 122; Geology 125–126; Physics 127–128, 137–138	10	
Select 5 additional hours from the following: (1) Another mathematics course from the list above or (2) another of the laboratory science courses listed above or (3) Geography 104; Horticulture 101, 201; Philosophy 258; Physical Science 101; Statistics 200	5	
AREA III SOCIAL SCIENCES		20
Political Science 101	5	
History 111, 112, 251 or 252	5–10	
Anthropology 102; Economics 105, 106; Geography 101; Geography 102; Philosophy 104; Psychology 101; Sociology 105	5–10	
AREA IV[6] COURSES RELATED TO MAJOR		30
Foreign Language[7]	15	
or		
Fine Arts Appreciation[8]	15	
Humanities and/or Social Science, exclusive of Journalism[9]	5–15	
Journalism[10]	0–10	

Journalism Curriculum Requirements

HOURS

AREA V COMMUNICATIONS CORE CURRICULUM

The communications core curriculum is designed to introduce beginning students to a wide range of knowledge and thought that is common to all mass communications media and areas. The core prepares students to enter any concentration in the school with a basic understanding of mass communications in the broad sense and a solid introduction to the concentration of their choice. The communications core curriculum is a prerequisite to the major sequences.

Journalism 101, Mass Communication I: Survey		5
Journalism 203, Mass Communication II: Philosophy (not required for students entering college Fall 1976 or later)	5	
TOTAL	5–10	

MAJOR SEQUENCES

The three major sequences available to students in the School of Journalism are **news-editorial**, with majors in broadcast news, magazines, newspapers, or publication management; **advertising-public relations**, with majors in advertising or public relations; and **radio-television-film**, with a major in tele-communication arts.

TOTAL 45

MINOR

The minor includes those subjects that will be most useful to the major field of study. Minor courses are selected with the advice and approval of the student's adviser.

TOTAL 30

NON-JOURNALISM ELECTIVES

Within the program of study, every student may select several elective courses to complete the total requirement of 195 quarter hours. Any course, except journalism or basic physical education, which is not already a part of the student's program may be selected as an elective. Basic and advanced ROTC may be used as elective credit and can be taken in addition to the student's normal course load of 15–18 hours per quarter.

HOURS	14–24[11]
Physical Education[12]	5–6
Total Requirements for Bachelor of Arts in Journalism Degree	195

Major Sequences

News-Editorial

This sequence is designed to help students prepare for news and editorial careers with newspaper, press associations, magazines and the broadcast media. A student selects a concentration—newspaper, magazines, broadcast news, or publication management—as his/her major interest and builds his/her program accordingly. The courses listed for each concentration are in addition to the hours required in the communications core curriculum.

Newspapers

Sequence Core

Required:

Journalism 260, News Writing and Reporting	5

351, Editing and Makeup 5
460, Public Affairs Reporting 5

Sequence Major:
At least 15 hours from the following:
Journalism 280, Basic Photography 5
454, Law of Communication 5
553, Editorials and Issues 5
558, Magazine Article Writing 5
560, Investigative Reporting 5
567, Contemporary American Newspapers 5

Journalism Electives
Select 15 hours of additional journalism courses.

Magazines

Sequence Core
Required:
Journalism 260, News Writing and Reporting 5
351, Editing and Makeup 5
558, Magazine Article Writing 5

Sequence Major:
At least 15 hours from the following:
Journalism 204, Mass Communication III 5
280, Basic Photography 5
454, Law of Communication 5
456, Contemporary American Magazines 5
460, Public Affairs Reporting 5
553, Editorials and Issues 5
559, Critical Writing and Reviewing 5
560, Investigative Reporting 5
570, Advanced Projects in Magazines 5

Journalism Electives
Select 15 hours of additional journalism courses.

Broadcast News

Sequence Core
Required:
Journalism 260, News Writing and Reporting 5
381, Radio-Television News 5
512, Basic Telecommunication Production 5

Sequence Major:
At least 15 hours from the following:
Journalism 280, Basic Photography 5
460, Public Affairs Reporting 5
461, Advanced Radio-Television News 5
544, Television Acting and Performing 5
560, Investigative Reporting 5
586, Cinematographic Techniques 5

Journalism Electives
Select 15 hours of additional journalism courses.

Publication Management

Sequence Core
Required:
Journalism 260, Newswriting and Reporting 5
351, Editing and Makeup 5
564, Newspaper Management

Sequence Major:
At least 15 hours from the following:
Journalism 352, Graphic Communications 5
280, Basic Photography 5
557, Principles of Advertising 5
575, Advertising Copy 5
454, Law of Communication 5
460, Public Affairs Reporting 5

Journalism Electives
Select 15 hours of additional journalism courses.

Advertising-Public Relations

This sequence is designed to give the student an understanding of the principles and techniques of marketing and institutional communications of business and other organizations. A student may concentrate in a program of studies leading to a career in advertising or public relations. The courses listed for each concentration are in addition to the 10 hours required in the communications core curriculum.

Advertising

Sequence Core
Required:
Journalism 557, Principles of Advertising 5
575, Advertising Copy Writing 5
576, Advertising Media 5

Sequence Major:
At least 15 hours from the following:
Journalism 352, Graphic Communications 5
523, Mass Communications Research 5
574, Advertising Campaigns 5
578, Retail Advertising 5
579, Advanced Advertising Copy 5
584, Radio-Television Advertising 5
598, Industrial Advertising 5

Journalism Electives
Select 15 hours of additional journalism courses.

Public Relations
Sequence Core
Required:

Journalism 260, News Writing and Reporting	5
352, Graphic Communications	5
577, Public Relations	5

Sequence Major:
At least 15 hours from the following:

Journalism 523, Mass Communications Research	5
590, Business and Industrial Publications	5
591, Public Relations Administration	5
592, Public Relations Communications	5
595, Public Relations Campaigns	5

Journalism Electives
Select 15 hours of additional journalism courses.

Radio-Television-Film

This sequence provides students with professional courses of study in both theory and practice of radio, television, and film. Students who elect to major in the sequence are required to successfully complete a sequence core of 15 hours and a sequence major of 10 hours as a general foundation prior to specializing in an emphasis area in addition to the hours required in the Communications Core Curriculum.

Sequence Core:
Journalism 301, American Telecommunication Systems
302, Analysis of Telecommunication Messages
303, Telecommunication Audiences

Sequence Major:
Journalism 511, Writing for Telecommunication
512, Telecommunication Production

Emphasis Electives:
A student will select 20 hours to develop, in depth, a program of study in radio, television, or film. Selection of these courses will not be limited to those offered by the sequence. By careful selection of courses in this area, in concert with the minor, the student can attain competence in areas of production, writing, management, sales, performance, or any combination of these areas. Thus a student with the assistance of his/her adviser can develop a unique program suited to his/her individual career objective.

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[1] Some students who fulfill requirements by exempting Pre-Journalism Core Curriculum courses without credit through the Advanced Placement Program may need additional hours of elective courses. These hours must come from liberal arts courses (at the University of Georgia any course offered by the College of Arts and Sciences meets this stipulation). Students who matriculate at the University of Goergia in Fall, 1977 or later must complete five hours of physical education.

[2] Students who take 10 hours in communications as part of Area IV will have 10 additional hours to complete in their non-journalism electives.

[3] Some students who fulfill requirements by exempting General Core Curriculum courses without credit through the Advanced Placement Program may need additional hours of elective courses. These hours must come from liberal arts courses (at the University of Georgia any course offered by the College of Arts and Sciences meets this stipulation). Students who matriculate at the University of Georgia in Fall, 1977 or later must complete five hours of physical education.

[4] Satisfactory completion of Areas I, II, and III at any institution in the University System of Georgia is acceptable and transferable. Consideration of credit from non-System colleges and universities will be given on an individual student basis.

[5] Students not choosing two literature courses as part of their General Core Curriculum must take these courses as part of the degree requirement. In this case, they may be counted for non-journalism elective credit.

[6] Satisfactory completion of Area IV (Journalism) at any institution in the University System of Georgia is acceptable and transferable. In many instances courses taken in Area IV by persons in majors other than journalism can be used. Transfer students should be aware of the need to fulfill the foreign language or fine arts appreciation degree requirements.

[7] Foreign language (select one of the options): (a) Three courses in a foreign language (courses 101–102–103 in a modern foreign language; courses 201–202–203 in Greek, Latin, or Hebrew; or courses 401–402–403 in Japanese) if the student offers less than two high school units in foreign language or if the student offers two or more high school units and continues the same language begun in high school; (b) Two courses in foreign language (courses 401–402 in Japanese, or courses 101–102 in another foreign language, or courses 201–202 in Greek, Hebrew, or Latin), if the student offers two or more high school units and changed from the language begun in high school. Acceptable languages are French, German, Greek, Hebrew, Italian, Japanese, Latin, Russian, and Spanish.

[8] Fine Arts (Art 300, Drama 300, Music 300). Students who already have credit for Fine Arts 300 and who therefore cannot receive credit for Art 300 or Music 300 are permitted to elect the fine arts requirement (as opposed to language) by taking the following: Fine Arts 300, Drama 300, and one of the following: Drama 222, Art 287, Art 288, Classics 120, 121, 310. No credit will be allowed for Fine Arts 300 when credit is already shown for Art 300 or 317, Music 300, 343, or 359H.

[9] Included are such subjects as the following: anthropology, art, classics, comparative literature, drama, economics, English, fine arts, foreign languages, geography (human and regional), history, linguistics, music, philosophy, (except 258), psychology (except experi-

mental), religion, political science, sociology, and speech.

[10] Sometimes, especially in the case of certain transfer students, it is advisable to use one or two journalism courses in Area IV. Whether journalism credit is used in Area IV or not, the maximum amount of credit in journalism which may be used toward graduation is 55 hours.

[11] 19 hours for students entering college Fall 1976 or later; 14–24 hours for students entering college prior to Fall 1976.

[12] If a student satisfied the physical education requirement by fewer than six courses (due to his transfer status or other reasons) the requirement of 195 hours for graduation is not changed; he must take the hours in non-journalism elective courses.

THE SCHOOL OF LAW

ADMINISTRATIVE OFFICER

J. Ralph Beaird, B.S., LL.B., LL.M., *Dean*

GENERAL INFORMATION

Accreditation

The School of Law is a member of the Association of American Law Schools and is on the approved list of the American and Georgia Bar Associations.

Purposes

The courses of study offered in the School of Law are designed to give a thorough knowledge of the Anglo-American system of common law and to familiarize the student with statutory laws. Emphasis is placed on teaching the student how to make a practical application of the legal principles learned. The School also undertakes to shape the interests and aims of its students so as to make them respected and useful citizens and to instill in them that high sense of personal honor and regard for professional ethics that should characterize members of the legal profession.

Method of Instruction

In general, the school operates under the case method of instruction designed to enable students to master the common law and equity as working systems. The student studies actual cases, deducing from them the principles of law involved, and this approach tends to develop in the student the power of analysis of legal problems. In addition, however, the study of cases is supplemented by statutory and textual materials. Instruction is also given in the drafting of legal instruments by requiring the students to prepare, under the supervision of an instructor, contracts, leases, deeds, wills, charters, and other legal documents.

Practical instruction in the preparation and trial of cases is given in a practice court under conditions made as nearly as possible like those prevailing in the courts of the state of Georgia. The work of this court is carried on under the direction of a member of the faculty, judges, and practitioners. Exercises conducted relate to the preparation of pleadings, examination and cross-examination of witnesses, writing of briefs, presentation of arguments to the court and jury, taking of cases from lower courts to appellate courts, and other related subjects.

Facilities

The Law School is located on the North Campus in a splendid structure completed in 1967. Classrooms, offices, and the Law Library are housed under one roof and are spacious, well-lighted, and comfortable. The Law Library presently houses about 234,000 volumes, and is being expanded by 10,000 volumes annually. The library is administered by seven professional librarians, plus 12 other full-time employees. Adjacent to the Law School and available to law students is the University's Main Library. Law Library facilities are available more than 100 hours per week.

Degree Offered

The School of Law offers the Juris Doctor and Master of Laws degree. Complete information about these degree programs may be found in the Law and Graduate School Bulletins.

Special Programs

Continuing Legal Education

Beginning in 1965, the School of Law has organized the resources of the University of Georgia, the State Bar of Georgia, and the law schools of Emory and Mercer Universities to provide timely continuing legal education programs for attorneys throughout the state.

Sibley Lectures
Supported by the Charles Loridans Foundation of Atlanta, Georgia, the John A. Sibley Lectureship in Law brings to Athens each year outstanding legal scholars from all over the United States who meet with regularly scheduled classes in their fields.

Other Activities
In addition, the *Georgia Law Review*, the *Journal of International and Comparative Law*, the Prosecutorial Clinic and the Legal Aid and Defender Society offer advanced students opportunities to participate in the publication of legal periodicals, and assist in counseling, trial preparation, and trial practice in local courts.

Placement

The School of Law offers assistance to every law graduate in securing suitable professional employment. Through the placement office the law student is offered guidance and counseling in selecting an employment objective.

While the state of Georgia continues to attract most of the law graduates, students are accepting positions in many other regions. Graduates are located throughout the United States and in several foreign countries where they are serving business, industry and government as well as engaging in private law practice.

Scholarships, Loans, and Student Employment

Law students are eligible for scholarships, grants, loan funds, and part-time employment through the University and the Law School. See the Law School Bulletin, or write to the Director of Admissions of the School of Law for further information.

Admission

General Requirements
An applicant for admission to the School of Law as a candidate for the degree of Juris Doctor must present satisfactory evidence that he or she is a graduate of a college of approved standing. Compliance with minimum standards does not, however, guarantee admission. "Acceptable required work" connotes more than satisfaction of minimum academic requirements; it presents, rather, substantial scholastic attainment. Moreover, suitability of an applicant for admission should be gauged not only by his undergraduate record, but also by his character and reputation, the nature of his training and experience, and by his demonstrated aptitude for the study of law.

No fixed pre-law academic program is required for admission. The prospective law student is encouraged to seek a broad general education which will tend to develop ability to communicate with others both orally and in writing and yet impart substantive knowledge of genuine intellectual context. Any subject content, regardless of field, which helps develop clear and systematic thinking, constitutes sound preparation for the study of law.

Law School Admission Test
Questions relating to the Law School Admission Test and application procedures generally should be addressed to the Admissions Office, School of Law, The University of Georgia, Athens, Georgia 30602.

Transfer Students
The dean may, at his discretion, give full credit for work completed in law schools registered as members list of the Association of American Law Schools and approved by the Americn Bar Association. It is recommended that transfer be requested only after completion of at least one year of study, and prior to beginning the third year of study, in order to meet residence requirements for a degree. Transfer requests should be made directly to the Law School admissions office.

THE SCHOOL OF PHARMACY

ADMINISTRATIVE OFFICERS

Howard C. Ansel, B.S., M.S., Ph.D., *Dean*
Durward Neal Entrekin, B.S., M.S., Ph.D., *Associate Dean*

GENERAL INFORMATION

Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education.

Purpose

The purpose of the School of Pharmacy is to provide for the comprehensive academic needs of the profession of pharmacy. Manpower needs of the profession are supplied through the school's undergraduate educational program which prepares students for the practice of pharmacy, and through its graduate program which prepares individuals for professional specialization and for a career in teaching and research. The postgraduate educational needs of the profession are met by the school's continuing education and service programs. Faculty research supports all of these programs and contributes to the advancement of the body of pharmaceutical knowledge.

Facilities

The School of Pharmacy building is one of the most striking pharmacy school structures in the United States, having won an award for design excellence from the American Institute of Architects. Encompassing some 96,000 square feet of space, it is completely air-conditioned and is equippped with classrooms, laboratories, and research facilities.

Degree Offered

The School of Pharmacy offers the degree of Bachelor of Science in Pharmacy. Complete information about this degree program may be found in the School of Pharmacy Bulletin.

Graduate Study

The Graduate School of The University of Georgia offers the Master of Science and Doctor of Philosophy degrees in various specialty areas of pharmacy. Complete information about these degree programs may be found in the School of Pharmacy and Graduate School Bulletins.

Pre-Pharmacy Core Curriculum

	HOURS	
AREA I HUMANITIES		20
English 101–102	10	
Speech 108 or 109	5	
Literature: May be chosen from Comparative Literature 121, 122; English 131, 132, 203, 204; or foreign languages (intermediate level)	5	
AREA II MATHEMATICS AND NATURAL SCIENCE		20
Mathematics 116 (or equivalent pre-calculus mathematics)	5	
Chemistry 121, 122, 223	15	
AREA III SOCIAL SCIENCES		20
History 251 or 252	5	
Political Science 101	5	
Economics 105	5	
Elective (should be chosen from History 111, 112, 251, 252; Political Science 202, 203; Psychology 101, 258; Sociology 105, 260, 293; Anthropology 102	5	

AREA IV COURSES RELATED TO MAJOR		30
Chemistry 240–241	10	
Biology 101–102	10	
Physics 127–128	10	

For more detailed information, refer to the pre-pharmacy program outlined in the College of Arts and Sciences section of this bulletin, or write for a School of Pharmacy Bulletin. For more information on the pharmacy professional programs, obtain a copy of the Pharmacy Bulletin from: Dean, School of Pharmacy, The University of Georgia, Athens, Georgia 30602.

THE SCHOOL OF SOCIAL WORK

ADMINISTRATIVE OFFICERS

Charles A. Stewart, *Dean*
Pauline D. Lide, *Associate Dean*
Herbert H. Jarrett, *B.S.W. Director*

GENERAL INFORMATION

The Bachelor of Social Work degree is the first professional social work degree. This program of study prepares the student for beginning professional practice as a social worker. The liberal arts base combined with appropriate professional courses provides the fundamental knowledge and skill needed to assume the role of a competent practitioner. The appropriate social work value and ethical base necessary for professional practice is also a central part of the curriculum. The student exits the BSW program as a generalist in the field of human services.

Purposes and Goals

The goal of the School of Social Work is to provide an education designed to prepare the undergraduate student for beginning professional social work practice.

This goal is to be realized through:

(1) Providing intellectual stimulation for the student in a search for knowledge and truths and to aid him in developing problem solving processes for professional use in helping individuals, groups, and communities.

(2) Helping to develop student learning and introspective stances which will serve their lifelong learning needs and development of self-awareness.

(3) Motivating students to evaluate and use research findings and recognize the need for further researching regarding human problems.

(4) Enabling students to gain knowledge and to develop values and skills for beginning professional social work practice.

Facilities

The School of Social Work is located in Tucker Hall on South Campus. Extensive University resources enrich the curriculum of the School of Social Work. Research facilities include the resources of the Computer Center, the Institute of Behavioral Research, and the Social Work Research Center.

Degree Offered

The School of Social Work offers the undergraduate degree of Bachelor of Social Work (BSW)

Accreditation

The Bachelor of Social Work degree program is accredited by the Council on Social Work Education.

Graduate Study

The degree of Master of Social Work is offered by the Graduate School of the University. Refer to the Graduate School Bulletin for further information.

Advising

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Certain printed material and the School's academic advising program are available to assist the student.

Each student in the School of Social Work is assigned to an academic adviser. Freshmen and sophomores have a general adviser; juniors and seniors have a permanent professional adviser to help with the student's course of study and professional development.

Honors Program

Qualified students are encouraged to participate in the University of Georgia Honors Program. Appropriate academic advising is provided for B.S.W. students who are also in the Honors Program.

Grades

B.S.W. students are required to maintain a 2.0 or better in all social work courses and must obtain a cumulative average of 2.0 or better on all work done at the University in order to graduate.

Undergraduate Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as set down in the general information section of this catalog.

The point of entry into the BSW program for the student has been designated at the Rising Junior level. Preprofessional advisement begins at the freshman level when possible. Transfer students may enter the program after having received credit for the equivalent of ninety quarter hours.

Students wishing to apply for entry in the BSW program should do so by the second quarter of their sophomore year. The admissions process may include an interview, aptitude tests, computation of academic average, and assessment of the student's values and attitudes as related to social work. All admissions procedures should be completed prior to the beginning of the junior year. For further information contact the Director of the BSW program, School of Social Work, Tucker Hall. The BSW curriculum is divided into four parts. Eighty-five hours of the student curriculum is designated to be taken in general education courses, twenty-five hours to be taken in the field of human behavior, fifty hours are to be taken in social work and the student is permitted to take twenty hours of electives.

Maximum flexibility is allowed in choice of courses within specified categories except for the required social work courses. Professional advising will be provided.

The general education category includes six sections: Communication Skills; Political Science, Economics and Geography; Mathematics and Research Development; Biological Sciences; History; and Cultural Studies. These sections provide a liberal arts base and thus lay the foundation for development of the knowledge, skills, and attitudes needed in professional practice.

The undergraduate social work student is required to have a minimum of 400 clock hours of educationally directed field experience. The experience will give students the opportunity to integrate knowledge and develop skills in a variety of social work practice domains.

GENERAL UNIVERSITY REQUIREMENTS FOR BACHELOR DEGREE IN SOCIAL WORK

		HOURS
1. COMMUNICATION SKILLS		20
English 101—required	5	
English 102—required	5	
Speech 467—required (Interviewing)	5	
Electives	5-10	
English 101 is required with credit or may be exempted.		
2. POLITICAL SCIENCE, ECONOMICS AND GEOGRAPHY		10
Political Science 101—required	5	
Elective	5	
3. MATHEMATICS AND RESEARCH DEVELOPMENT		20
Statistics 200—required	5	
SW 432—required (Social Work Research)	5	
Electives	10	
Math 100 receives no credit towards graduation, and may be exempted.		
4. BIOLOGICAL SCIENCES		10
Biology 101—required	5	
Biology 102—required	5	
5. HISTORY		5
History 251 or 252	5	
is required unless the student passes the Georgia and U.S. history test. If test is passed, any other history course can be taken for 5 hours.		
6. CULTURAL STUDIES[1]		20
The course content under cultural studies will enable the student to gain knowledge of different socio-cultural systems and their effect on human development and behavior. An understanding and appreciation of the		

ethnic, racial, and cultural diversity can also be obtained from the course content in this area; for example, Sociology, Anthropology, History, or Foreign Language.

7. HUMAN BEHAVIOR[1] 20

The course content under Human Behavior will include knowledge about people as individuals and in relation to groups, organizations, and communities; for example, Psychology, Home Economics, and Sociology.

8. MAJOR COURSES—REQUIRED 50

SW 215 Field of Social Work	5
SW 220 Social Welfare as a Social Institution	5
SW 352 Interventive Methods of Social Work Practice	5
SW 391A Seminar in Social Work Practice with concurrent practicum	5
SW 441 Bases of Social Functioning	5
SW 470 Social Welfare Structures and Policies	5
SW 391BCD Seminar in Social Work Practice-block field	15
SW 500 Senior Seminar	5

9. ELECTIVES 25

General Electives	15
Electives in substantive areas selected in consultation with advisor	10

TOTAL 180

Physical Education—All freshmen and sophomores are required to complete five quarters of physical education with passing grades except as provided under "General Information" in the University of Georgia Bulletin.

Learning Service Centers

The School of Social Work has developed and is presently using Learning Service Centers located in Athens, Gainesville, Milledgeville, and Atlanta for arranging and monitoring the necessary field experiences for the undergraduate students and graduate students in the School of Social Work. It is through these centers that students will have their field instruction experiences. Undergraduates should be prepared to spend at least one quarter in an off campus Learning Service Center.

Graduation Information

A student should apply for graduation at the Registrar's Office in the Academic building within ten class days after reaching senior status (135 hours). The School of Social Work, in cooperation with the Registrar's Office, has deadlines for completing graduation check-out.

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[1] The professional advisor will provide educational direction and supervision to the student in those course areas which will meet the student's educational needs. All courses taken in these areas must be with approval of advisor.

THE COLLEGE OF VETERINARY MEDICINE

ADMINISTRATIVE OFFICERS

David P. Anderson, B.S., D.V.M., M.S., Ph.D., *Dean*
John M. Bowen, D.V.M., Ph.D., *Associate Dean*
Charles N. Dobbins, Jr., B.S., D.V.M., *Associate Dean*
Oscar J. Fletcher, B.S., D.V.M., M.S., Ph.D., *Associate Dean*
Harold E. Snyder, B.S., M.S., *Assistant to the Dean*

GENERAL INFORMATION

Purpose and Organization

Veterinary medicine is the health profession that applies the principles of the biomedical sciences to health and disease in animals, contributes to many areas of human need through research and, in its practice, has important direct and indirect implications for human health. Its basic concern is the protection and improvement of the health and economic welfare of our nation. Veterinary medicine is a unique combination of medical science, agricultural science, and biological science.

The University of Georgia College of Veterinary Medicine is designed to meet the educational needs of prospective veterinarians from the Southeast. At present, students are accepted from Georgia, Maryland, South Carolina, and Virginia through a Southern Regional Education Board agreement. The present first year class quotas permit Georgia to enroll 50 students each year; Maryland, 4, South Carolina, 13, and Virginia, 19. A maximum of 86 students are admitted to the four-year curriculum each fall. The College is officially recognized as a fully accredited institution by the Council on Education of the American Veterinary Medical Association.

The College of Veterinary Medicine also has postgraduate instructional responsibilities, which are described in the separate College of Veterinary Medicine Bulletin. Such additional training is necessary to prepare students for careers in teaching and research. In addition, a program of continuing education for veterinary practitioners is offered approximately once each month to keep the profession up-to-date on advances in the science and art of veterinary medicine.

Research programs intended to insure the health of the animal resources of Georgia and to protect the human population from those diseases transmittable from animals to man are conducted in the Veterinary Medical Experiment Station. Studies are conducted on diseases of farm animals, pets, wildlife, poultry, fish, marine life, horses, and laboratory animals. These research programs are an integral part of the training of graduate students.

The College faculty also functions in various service capacities through the facilities of the college's Teaching Hospital and the Veterinary Diagnostic Laboratories, located in Athens and at Tifton, Georgia.

Facilities

The college is composed of clinics, offices, laboratories, and classrooms designed to meet the needs of practicing clinicians and their students. Space for large animal surgery, classrooms, auto-tutorial instruction, library and student facilities recently has been added to the college. A wing housing 26 offices with adjacent laboratories, a complete electron microscopy suite, laboratory animal facilities, environmental control rooms, and laboratories for parasitology, physiology, pharmacology, toxicology, and surgery was occupied in 1972. A new 7.1 million dollar teaching hospital, scheduled for completion in 1978, will more than triple the College's hospital capacity. Additional space for maintaining animals is available at the veterinary farm and the Poultry Disease Research Center.

Diagnostic Laboratories

Frank E. Mitchell, *Director, Tifton Lab*
Jack L. Blue, *Director, Athens Lab*

The college maintains diagnostic laboratory facilities in Tifton and Athens to assist the veterinarian in diagnosing animal diseases. Funded by the Georgia Department of Agriculture, the laboratories are designed to handle problems concerning large and small domestic animals, as well as laboratory and exotic animals. Laboratory services include pathology, microbiology, toxicology, and serology. Both facilities are staffed by veterinary medical diagnosticians and technicians. Though the labs exist primarily as a service to animal owners through their veterinarians, many diagnostic laboratory cases are utilized by faculty members for instructional purposes. Extension veterinarians meet with citizen groups and practitioners in these facilities to present pertinent information or recent developments to those concerned.

Veterinary Teaching Hospital

Robert L. Gearhart, *Hospital Administrator*

The foremost objective of the Veterinary Teaching Hospital is to provide clinical experience for students. This method of instruction enables the prospective veterinarian to familiarize himself with veterinary clinical cases under the supervision of practicing clinicians. The staff is composed of faculty members trained in various phases of veterinary medicine and surgery, including internal medicine, surgery, radiology, dermatology, ophthalmology, urology, neurology, gastroenterology, oncology, reproduction, equine lameness, food animal and equine medicine and surgery, and herd health management. In addition, the staff's services and hospital facilities are available to the private practitioner on a referral or consultation basis and for the continuing education of practitioners.

Degree Offered

The basic professional degree offered by the college is the *Doctor of Veterinary Medicine.* The college also administers graduate programs leading to masters and doctoral degrees. Specific information concerning programs at the undergraduate, professional, and graduate levels may be found in the College of Veterinary Medicine Bulletin and the Graduate School Bulletin, copies of which may be obtained by writing.

Office of the Dean
College of Veterinary Medicine
University of Georgia
Athens, Georgia 30602

Graduate School
Graduate Studies Building
University of Georgia
Athens, Georgia 30602

Admission

Specific inquiries about admission policies may be addressed to the Associate Dean for Academic Affairs, College of Veterinary Medicine. The University of Georgia is an equal opportunity employer and does not discriminate on the basis of age, sex, or ethnic origin.

Applications from qualified persons of minority groups are actively encouraged.

Requirements for Admission

In order for the student entering veterinary medical college to be prepared for the courses, he or she must have acquired certain basic scientific information. Such information is ordinarily obtained in the following undergraduate courses:

- English
- Physics[1]
- Biology
- Chemistry (inorganic and organic)[1]
- Humanities and social studies

Although two years of college is the minimum requirement, the student should pursue a well-rounded B.S. degree program. The requirements for admission to the College of Veterinary Medicine are based on the premise that the program of training of a veterinarian is a continuous one shared by both the undergraduate college and the veterinary medical college. The responsibility of the undergraduate training program is thus not only to provide the prospective student with the technical information and skills which will make it possible to complete the course in veterinary medical college, but also to help develop a broad background of experience and interest which will make it possible later to achieve a full realization of potential as an individual and as a member of society.

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[1] *Must be at the pre-medical sciences level and not a survey course.*

Pre-Veterinary Medical Program

For students at the University of Georgia, there are two primary pre-veterinary programs. The required courses for admission to the College of Veterinary Medicine can be completed at any accredited college or in conjunction with studies in any major in the College of Arts and Sciences or College of Agriculture. Either of these options is equally acceptable, and the decision as to which major to declare should be determined by the student's alternate interest and ability.

Combined B.S.-D.V.M. Program

The combined B.S.-D.V.M. program is available at the University of Georgia. A three-year pre-veterinary student may qualify by completing the required courses of the selected major in the College of Arts and Sciences or the College of Agriculture and utilizing the first year professional veterinary courses in the College of Veterinary Medicine as electives on the B.S. degree program. Students completing the pre-veterinary requirements in two years, applying, and being accepted into the professional program are not eligible for the B.S.-D.V.M. program. All pre-veterinary students should have an alternative degree program in mind in the field of their choice to pursue if they do not gain admission to the College of Veterinary Medicine.

Application

Applicants must complete and return to the appropriate state official an application form, which must be received no later than January 10 of the year in which they intend to matriculate. This application must include two copies of transcripts from each institution of higher education attended by the applicant. To be eligible for consideration, the applicant must be able to complete at least 90 quarter hours, including all required courses, by the end of the academic year in which he or she intends to matriculate. No courses over eight years old will be considered.

Application is open to legal residents of Georgia, South Carolina, Maryland and Virginia. State officials who may be contacted for application forms and interview dates are:

Maryland Residents
Pre-Veterinary Advisor
Department of Veterinary Science
College of Agriculture
University of Maryland
College Park, Maryland 20740

Virginia Residents
Council of Higher Education
Commonwealth of Virginia
700 Fidelity Building
9th and Main Streets
Richmond, Virginia 23219

South Carolina Residents
Pre-Veterinary Advisor
Department of Animal Science
College of Agriculture and Biological Science
Clemson University
Clemson, South Carolina 29631

Georgia Residents
Associate Dean for Academic Affairs
College of Veterinary Medicine
University of Georgia
Athens, Georgia 30602

Eligibility

In order to be considered for admission, applicants must have accumulated a 2.7 grade point average.

No person is eligible for admission who has been excluded or is on probation at any school or college for deficiency in scholarship or because of misconduct. All admissions to The University of Georgia College of Veterinary Medicine are conditioned on the applicant's continued satisfactory academic work between the date of his or her tentative acceptance and actual entry into the college. A student who gains entrance to the college by misrepresentation will be immediately dismissed.

Graduate Record Examination and Veterinary Aptitude Tests.

Each applicant will be required to take the Graduate Record Examination (GRE), including the Advanced Biology section, and the Veterinary Aptitude Test (VAT). Information about the GRE can be obtained from testing and evaluation centers or graduate school offices of most colleges or universities. Information about the VAT can be obtained from the Psychological Corporation, 304 East 45th Street, New York, New York 10017. These tests must be completed and the results available by the deadline date for receipt of applications. Scores will be accepted only from tests taken within three years prior to the year of intended matriculation.

Interviews

Personal interviews with the admissions committee of the College of Veterinary Medicine are granted to the most highly qualified applicants (approximately two to three times the number that can be accepted from each state). Applicants are expected to present themselves for interview at the appointed time. All interviews will be conducted in the office of the dean unless an applicant is otherwise notified.

Notification of Applicant Status

Notification of the action of the college on all applications will be mailed directly to the individuals on or about April 15 of each year. This action will be in the form of (1) tentative acceptance, or (2) not accepted.

Program of Study

Students at the College of Veterinary Medicine follow a four-year program of study. The first three years of the curriculum are designed to integrate a sound knowledge of the basic medical sciences with clinical application. The fourth year of the curriculum is devoted entirely to the application of basic medical sciences to veterinary medical principles and procedures in a clinical situation.

The senior year is divided into twelve blocks of 22 instructional days each. Each student is required to take a block in equine medicine, food animal medicine, small animal medicine, and small animal surgery. In addition, he must spend two blocks in an externship experience, under the supervision of a practicing veterinarian. In the case of four other blocks, the student is permitted to elect an area of concentration, and if the student chooses, the remaining two blocks can be utilized either as free time or for further electives.

Complete course listings and descriptions are available in the College of Veterinary Medicine Bulletin, copies of which may be obtained from the Office of the Dean.

Student Activities

Students are governed by a comprehensive code of ethical conduct which is, for the most part, self-administered. The official student governing body is the student chapter of the American Veterinary Medical Association. Students also are involved in publication of the *Intra-Vet* newsletter, the *Veterinarius* yearbook, and Alpha Psi and Omega Tau Sigma professional veterinary medical fraternities.

THE GRADUATE SCHOOL

ADMINISTRATIVE OFFICERS

Hardy M. Edwards, Jr., B.S., M.S.A., Ph.D., *Dean*
Bradford N. Bunnell, B.A., Ph.D., *Associate Dean*
Harold W. Gentry, B.S., M.A., Ed.D., *Associate Dean and Coordinator of In-Service Graduate Studies*
Eugene L. Heric, B.S., M.S., Ph.D., *Assistant Dean and Coordinator of Instructional Institutes*
Marvin Blaine Doster, B.S., M.Ed., *Director of Admissions (Acting)*
Kermit R. Jeffers, B.S., M.Ed., *Assistant to the Dean (Acting)*
Mabel C. O'Conner, *Administrative Assistant to the Dean*
Mary Ann Keller, A.B.J., *Administrative Assistant to the Dean*

GENERAL INFORMATION

Purpose

The Graduate School has primary responsibility for the administration of advanced study in all schools and colleges of the university.

Organization

Matters of policy relating to graduate education are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty members appointed by the president on the basis of published research, effective teaching, and participation in other creative activities. The policies determined by the graduate council are administered by the Dean of the Graduate School.

The traditional degrees Master of Arts and Master of Science are offered in 24 and 28 disciplines, respectively. The Doctor of Philosophy degree is offered in 44 disciplines.

Professional masters degrees are offered in 18 areas. Professional doctoral degrees are offered in education and public administration.

Facilities

The Graduate School has access to the resources of the entire university. Of particular value are the University Libraries, containing approximately 1,600,000 books, serials, and documents. Graduate students may also use the union catalog for reference to the books and periodicals of Emory University, Agnes Scott College, Georgia Institute of Technology, State Department of Archives and History, and the Georgia State University Library to supplement their research.

The research program at the Oak Ridge Associated Universities, Oak Ridge, Tennessee, makes available facilities for research problems and thesis writing. The University of Georgia Marine Institute at Sapelo Island has research programs in progress on marine and aquatic biology, biochemistry, marine and coastal geology, geochemistry, and plant physiology. The Institute for Behavioral Research encourages studies in various disciplines concerned with changes in the people and culture of the South. The Institute of Higher Education serves as an institutional research facility for the university and assists individuals preparing for college teaching or institute research positions. The Institute of Ecology, with the support of the U. S. Atomic Energy Commission, coordinates and extends research and graduate training in the environmental aspects of atomic energy. Detailed information on the research programs in various fields is given in the Graduate School Bulletin.

Fellowships, Assistantships, and Scholarships

A wide variety of support for graduate students is available in the form of fellowships, graduate assistantships, teaching assistantships, and research assistantships.

Application blanks and further information may be obtained from the Dean of the Graduate School. Applications for financial assistance must be filed in the Graduate School by February 15 of each year.

Admission

Graduates of any institution accredited by regional accrediting associations are eligible to apply for admission to the Graduate School. An applicant should have ranked in the upper half of his/her undergraduate class and should have completed the equivalent of an undergraduate major in the field in which he/she proposes to study. Application forms may be obtained from the Graduate Admissions Office. Each applicant for admission must submit, with the formal application, two copies of official transcripts from all colleges and universities attended, including The University of Georgia, two official copies of test scores on an approved entrance test, and three letters of recommendation. There is a $10 nonrefundable admission application fee.

Applications and supporting credentials must be received in the Graduate Admissions Office no later than thirty days prior to the first day of classes of the quarter the student plans to enroll. Foreign applicants must apply at least eight weeks before the first day of classes of the quarter they plan to enroll.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No student will be admitted without the recommendation of a department. Final approval is given by the Dean of the Graduate School.

Students may not register unless they have been notified by the Graduate Admissions Office that they have been admitted to the Graduate School. Students participating in the Honors Program, and those registered in the School of Law, may enroll in graduate courses with the approval of their adviser and the Dean of the Graduate School. All students must be admitted prior to registering for classes. Materials submitted in support of an application will not be returned.

An applicant who does not register for regular campus courses in the quarter for which admission was granted should inform the Graduate Admissions Office of the change in plans, and request a new date of admission, if one is desired. Otherwise, the original admission will be cancelled, the applicant's file will be discontinued, and a new application will be required for admission at a later date.

A student who has been out of school one or more quarters, exclusive of summer, and is reenrolling for the *same* degree must submit to the Graduate Admissions Office an application for "readmission."

Entrance Tests

For any applicant, the Aptitude Test of the Graduate Record Examination is an acceptable entrance test for admission as a prospective degree candidate. Applicants for admission to masters' programs in education and law may offer scores on the National Teacher Examinations and the Law School Admission Test, respectively, in lieu of scores on the Graduate Record Examinations. Graduate Management Admission Test scores may be submitted in lieu of Graduate Record Examinations scores by applicants seeking admission as prospective candidates for the Master of Business Administration or the Master of Accountancy degrees. Entrance test scores over six years old are not acceptable.

The Graduate Record Examinations, National Teacher Examinations, Graduate Management Admission Test, and the Law School Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required, usually no later than 21 days prior to the date the examination is administered. Registration forms and detailed information on the availability and character of each examination may be obtained from the Graduate School or by writing to the Educational Testing Service, Princeton, New Jersey 08540.

Additional Information

Correspondence concerning admission should be addressed to the Graduate Admissions Office, The University of Georgia, Athens, Georgia 30602. Inquiries about facilities for advanced studies and research, programs of study, and departmental requirements should be addressed to the department concerned. More detailed information is given in the Graduate School Bulletin, which may be obtained by writing the Dean of the Graduate School.

Foreign Students

Since several months may be required to secure needed information, and to process an application from abroad, foreign nationals are urged to submit application materials as early as possible. The application must include the application form, two official transcripts from all colleges and universities attended, two official copies of test scores on an approved entrance test, a $10 nonrefundable graduate application fee, and three letters of recommendation. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. Foreign applicants, for whom English is not their native tongue, must submit TOEFL (Test of English as a Foreign Language) scores, in addition to scores on an appropriate entrance examination. The application, and all supporting materials of a student from abroad, must be received in the Graduate Admissions Office no later than eight weeks prior to the first day of classes of the quarter for which admission is desired.

Classification of Graduate Students

Only those students who are formally admitted to graduate standing will be eligible to register in the Graduate School.

Students may be admitted to the Graduate School in any one of the following classifications:

(1) *Prospective Candidate for a Degree.* A student who meets all the requirements for admission to a degree program and who has been recommended by the department in which he/she proposes to study may be admitted as a "prospective candidate" for that degree.

(2) *Non-Degree Student.* An applicant who holds a graduate degree from an accredited institution may apply for admission as a non-degree student by submitting an application supported only by a transcript showing the graduate degree. This classification permits individuals to enroll for graduate courses without becoming a candidate for a degree.

(3) *Graduate Transient.* Transient admission is granted to a student in good standing in any recognized graduate school who wishes to enroll in the Graduate School for any one quarter. The student will not be required to submit a full transcript of credits, but must submit, at least thirty days prior to the first day of classes of the quarter for which admission is desired, an application for admission and certification of graduate standing in another institution. A special form for this purpose is available from the Graduate Admissions Office.

(4) *Unclassified Postgraduate.* A graduate of a non-accredited college or foreign institution or one on whom some condition has been placed by the major department, may be admitted as an unclassified postgraduate. An unclassified postgraduate may later be admitted to full graduate standing on the basis of entrance test scores, his/her record at The University of Georgia, and the recommendation of the appropriate department. If an unclassified postgraduate is later admitted as a prospective candidate for a degree, work taken while in this classification may be eligible to be part of a degree program, subject to departmental regulations and approval of the student's adviser and the Dean of the Graduate School.

(5) *Post-baccalaureate.* An individual who holds a baccalaureate degree and wishes to enroll only in graduate in-service courses for self-improvement and/or certification purposes may apply for admission as a post-baccalaureate student. Prospective post-baccalaureate students must submit an application for admission to the Graduate School and two copies of all college/university credits. The application and transcripts must be in the Office of Graduate Admissions 30 days prior to the date of registration for the in-service course in which the student plans to enroll. No admissions fee is required with a post-baccalaureate application. Post-baccalaureate credit may be applied to a limited extent toward an advanced degree if approved by the student's major professor, the departmental graduate coordindator, and the Dean of the Graduate School. If a student admitted in the post-baccalaureate classification subsequently wishes to enroll as a prospective candidate for a degree, he/she must so advise the Director of Graduate Admissions, submit appropriate test scores and recommendations, and pay the $10 admissions fee.

Irregular Students

Applicants who have been denied admission to the Graduate School, if registered in the university, will be registered through the undergraduate school or college of their choice and classified as irregular students. No irregular student will be permitted to register for graduate courses, and no work taken by a student while in this classification may be counted for credit toward a graduate degree.

Should the work of the irregular student prove to be of such quality as to justify admission to graduate status, reconsideration may be given to the application for admission at any time after the student has completed a minimum of 15 quarter hours of approved course work in classes on the campus and has submitted satisfactory scores on an appropriate entrance test.

Course Numbers and Load

Courses numbered 800 and above are open only to graduate students. Certain courses devoted to fundamental knowledge carry a 400 number for undergraduates in the senior division and a corresponding 600 number for graduate students. Other courses, intended primarily for candidates for professional degrees, carry a 500 number for undergraduates in the senior division and a 700 number for graduate students.

A full course load for a graduate student is 10–17 hours per quarter. When holding graduate assistantships and teaching assistantships, students are expected to enroll for proportionately smaller loads. Students enrolling for over 17 hours per quarter must receive approval from the Graduate School. Any graduate student using university facilities and/or staff time must register for at least five quarter hours each quarter.

Probation and Dismissal

Students with a cumulative graduate course average below 3.0 for two consecutive quarters are placed on academic probation. They then must make a 3.0 or higher quarterly average each succeeding quarter that their overall cumulative average is below 3.0. These students are no longer on probation when their cumulative average is 3.0 or above. If they make below a 3.0 quarterly average while on probation, they are dismissed. When students repeat a course, the last grade will be utilized to calculate the cumulative average that is used for probation and dismissal.

DEGREES OFFERED

The degrees offered by the Graduate School are listed below. For specific requirements see the Graduate School Bulletin.

Advanced General Degrees

Master of Arts

The Master of Arts degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: anthropology, art history, business administration, classics, comparative literature, economics, education, English, French, geography, German, history, journalism, linguistics, mathematics, mathematics (non-thesis), mathematical statistics, music, philosophy, political science, Romance languages, sociology, Spanish, and speech communication.

Master of Science

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics, agricultural engineering, agronomy, anatomy (veterinary), animal science, biochemistry, botany, chemistry, child and family development, clothing and textiles, dairy science, entomology, foods and nutrition, food science, forest resources, geology, home economics, horticulture, housing/furnishings/home management, medical microbiology, microbiology, pharmacology (veterinary), pharmacy, physics, physiology (veterinary), plant pathology and plant genetics, poultry science, psychology, statistics, veterinary parasitology, veterinary pathology, and zoology.

Doctor of Philosophy

The university established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activity beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in agricultural economics, agronomy, animal nutrition, animal sciences, anthropology, art, biochemistry, botany, business administration, chemistry, child and family development, comparative literature, counseling and student personnel services, ecology, economics, education of exceptional children, educational psychology, English, entomology, food science, forest resources, geography, geology, history, linguistics, mathematics, microbiology, pharmacology (veterinary), pharmacy, philosophy, physics, physiology (veterinary), plant pathology and plant genetics, plant sciences, political science, poultry science, psychology, reading education, Romance languages, sociology, statistics, veterinary parasitology, veterinary pathology, and zoology. Applicants who are planning to study at this level should communicate with the Dean of the Graduate School with reference to the possibility of pursuing a program in the field of their choice.

This degree will not be granted upon the completion of any definite amount of work prescribed in advance. It will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and passing of such written and oral examinations as may be prescribed.

Advanced Professional Degrees

Master of Accountancy
This degree program prepares students for professional careers in public accounting or for executive positions in private accounting. It is open to students who hold a Bachelor of Business Administration degree or its equivalent.

Master of Agricultural Extension
This degree is designed especially for county agricultural extension workers. In addition to the general Graduate School requirements, one year of field experience in agricultural extension, or its equivalent, is required.

Master of Art Education
This program is designed to improve the professional competency of teachers and supervisors of art.

Master of Arts for Teachers
Programs leading to the Master of Arts for Teachers degree are designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, history, Romance languages, and Spanish.

Master of Avian Medicine
This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment, and prevention of poultry diseases.

Master of Business Administration
This program is designed for the student who desires sound training beyond the bachelor's degree, as preparation for a career in business. Any approved baccalaureate degree may be accepted as the prerequisite for the program.

Master of Education
This degree is designed for the student whose vocational objectives require preparation for teaching, supervision, and/or first line administration in public schools, junior colleges, and other educational and/or helping agencies. A student who contemplates becoming a candidate for this degree should seek the advice of the Director of Graduate Studies of the College of Education as to the program he/she should follow. The Master of Education degree may be obtained in the following areas: adult education, agricultural education, art education, audiology education, business education, cooperative vocational education, curriculum and supervision, distributive education, early childhood education, educational administration, educational media, educational philosophy, educational psychology, elementary education, emotionally disturbed children, English education, foreign language education, guidance and counseling, health education, health occupation education, home economics education, industrial arts education, interrelated program in exceptional children, learning disorders, library education, mathematics education, mental retardation, multiple handicapped, music education, park and recreation administration, physical education, reading education, recreation, rehabilitation counseling, safety/driver/traffic education, school psychometrist, school social services education, science education, social science education, speech education, speech pathology, student personnel in higher education, supervision, trade and industrial education, and vocational education.

Master of Fine Arts
This program is for students in the creative and performing arts whose professional objectives require advanced skills in art, drama, and music.

Master of Forest Resources
This is a professional program designed to be a terminal degree program for forest resources managers.

Master of Home Economics
This program prepares students for professional careers in home economics and related professions.

Master of Landscape Architecture
This program provides advanced training for landscape architects and graduates in related fields.

Master of Laws
The L.L.M. program is essentially a fourth year of J.D. studies, affording an opportunity for further study in fields not fully covered in undergraduate law work.

Master of Music Education
This program prepares students for professional careers in teaching or supervising school music or in music therapy.

Master of Plant Protection and Pest Management
This program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, and regulatory agencies.

Master of Public Administration.
Advanced professional training for graduates who plan to work in public administration is provided by this program.

Master of Social Work
This program emphasizes both clinical social work practice and community social policy.

Specialist in Education
This degree is planned for the student who seeks advanced specialized training in a selected area in order to improve teaching, supervisory, and/or administrative skills.

The program for the Specialist in Education degree shall consist of a *minimum* of 45 quarter hours of study at the graduate level beyond the master's degree.

Doctor of Education
This degree provides advanced professional training for careers in teaching, administration, and other educational services. At the present time, the degree is offered in the following fields of education: adult education, art education, business education, counseling and student personnel services, curriculum and instruction, early childhood education, education of exceptional children, education of gifted, educational administration, educational measurements, educational philosophy, educational psychology, elementary education, geographic education, higher education, language education, mathematics education, music education, physical education, reading education, recreation, research design, school psychology, science education, social science education, sociology education, speech pathology, supervision, teacher education, and vocational education. Specialization in research skills and in subject fields appropriate to the public schools, higher education, and other educational and/or helping agencies is provided.

Doctor of Public Administration
The objective of the program is to provide advanced doctoral level education of high quality for individuals preparing to enter or are already employed at the higher executive or managerial level of the public service of federal, state, and local governments in the United States.

Program for Teacher Certification

For Majors in Education
The Georgia State Board of Education is the agency which awards professional certificates. The College of Education has been approved to offer graduate programs designed to qualify students for fifth-year, sixth-year, and seventh-year professional certificates.

For other details and requirements see the Graduate School Bulletin.

For Majors in Fields Other Than Education
Candidates for degrees in fields other than education may meet the requirements for a teaching certificate at the fifth-year level. For requirements see the Graduate School Bulletin.

DIVISION OF THE ARMED SERVICES

The Division of the Armed Services consists of the Department of Military Science and the Department of Aerospace Studies.

The Reserve Officer Training Corps programs are designed to develop leadership qualities and to give students an understanding of the Armed Forces and how they support the national policies and interest of the United States. In particular, ROTC programs are charged with the mission of commissioning second lieutenants who have the qualities, attributes and educational credentials essential for service as junior officers in the Army or Air Force.

Department of Military Science

The course of study offered in military science is designed not only to prepare the student for service as a commissioned officer in the United States Army but also to provide him with knowledge and practical experience in leadership and management that will be useful in any facet of society. Each student is provided with a working knowledge of the organization and functioning of the Department of Defense and the role of the U.S. Army in the national security and world affairs.

The course of study pursued by a student during his freshman and sophomore years is the basic military science course and/or related skill activities. The course of study normally pursued by a student during his junior and senior years is the advanced military science course. Students pursuing these courses are enrolled in the U.S. Army Reserve Officers Training Corps (ROTC).

For selection and retention in the advanced course, a student must be physically qualified, should have maintained above average military and academic standing, and demonstrate a potential for further leadership development.

Graduates of the advanced course are commissioned second lieutenants in the United States Army Reserve in the branch of service most appropriate to their interests and academic achievements, consistent with the needs of the Army. The branches of the Army include not only the vital combat arms, but such supporting technical fields as signal, ordnance, transportation, finance, legal, engineering, chemical, and medical. Regardless of the branch selected, all officers will receive valuable experience in management, logistics, and administration. Advanced course graduates will be called to active duty after graduation and will serve in their commissioned status for a period of three to six months or three years depending on the prevailing military requirements and circumstances. Graduates may be granted a delay in reporting for active duty for graduate study. A small number of outstanding students are designated distinguished military graduates and are offered commissions in the Regular Army each year.

Basic Military Science

Basic military science courses involve six quarters. The student learns the organization and roles of the U.S. Army and acquires essential background knowledge of customs and traditions, weapons, map reading, tactics and communications. Equally important, these courses have the objective of developing the student's leadership, self-discipline, integrity, and sense of responsibility.

Veterans entering the military science programs will receive appropriate placement credit for their active military service. Students who have completed military science courses in essentially military preparatory schools or junior colleges may be given appropriate credit. Students with at least three years of high school ROTC should contact the professor of military science in regard to their placement. Placement credit or six quarters of basic military science is a prerequisite to admission into the advanced program.

Advanced Military Science

The general objective of this course of instruction is to produce junior officers who by education, training, attitude, and inherent qualities are suitable for continued development as officers in the Army. There are two avenues available for the student to be eligible for entry into the advanced program and obtain a commission as a second lieutenant:

(a) satisfactory completion of, or placement credit for, the basic program at The University of Georgia or at any other school, college or university offering basic ROTC and meeting the entrance and retention requirements established by the Army as outlined below; and

(b) for those students who have not had the opportunity to take basic military science, a special two-year advanced program or an on campus summer school program offers a student transferring to this University the opportunity to enter the advanced course and earn a commission. For information on the two-year program or the summer school program, interested students should contact the professor of military science.

All Advanced cadets are paid a subsistence allowance of $100 per month while enrolled in the advanced course. For information concerning fees, uniforms, and books see "Financial Information."

Alternate Programs for Admittance to Advanced Military Science

Students transferring to the University with two years of college remaining, but who have not completed basic military science, are eligible to be considered for selection into the advanced military science program. Those selected under the provisions of the two-year advanced program must satisfactorily complete a basic summer camp of six weeks duration prior to entering the advanced program, or must enroll in the condensed Summer School phase of the basic course. This latter program consists of six, two-hour courses given during the summer quarter. A student may take other courses during this session. Upon successful completion of the military science courses, they will be placed in the advanced course. Students attending the basic camp at Fort Knox, Kentucky, are paid at active army rates and given a travel allowance from their home to camp and return.

Advanced Summer Camp

Students contracting to pursue the advanced courses are required to attend advanced summer camp, normally between their junior and senior academic years at Fort Bragg, North Carolina. Students attending this camp are paid at active army rates and given travel allowance from their home to camp and return.

Scholarship Program

Each year the U.S. Army awards one, two, three and four-year scholarships to outstanding young men and women who desire careers as regular Army officers. The Army pays tuition, fees, books, and laboratory expenses incurred by the scholarship student and, in addition, each student receives $100 per month for the academic year. Individuals desiring to compete for these scholarships should apply to the professor of military science at the University of Georgia. Four-year scholarship applications must be made to the major Army headquarters in the region in which the high school student resides.

Army ROTC Uniforms

Students enrolling in the Army ROTC program will be issued U.S. Army uniforms, books and supplies by the Military Science Department. No deposit of any kind will be required.

Department of Aeorspace Studies

Air Force ROTC offers male and female students a course of study designed to complement their individual academic major. Cadets enrolled in the program represent a broad cross-section of the UGA student body. Enrollment in either the two-year or the four-year program offers each cadet an additional future career option. The student/cadet has an opportunity to explore and evaluate Air Force career opportunities while earning a college degree. Completion of the AFROTC curriculum is the initial step in the education of the professional officer and provides a firm understanding of aerospace concepts, the Air Force mission, organization and operation. A commission as an officer in the United States Air Force is tendered at the time the University grants the bachelor's degree. Newly commissioned officers are normally granted a delay in entering active duty for the purpose of seeking advanced degrees.

General Program

The Air Force ROTC program consists of two phases: the general military course (GMC) and the professional officer course (POC); each phase requires six quarters of study on campus. The GMC course materials deal primarily with the various Air Force organizations and their missions, as well as the history of the Air Force. GMC courses meet for two hours each week. Junior year materials emphasize student involvement in learning and practicing management and leadership techniques. The senior year course deals extensively with the political, economic, and social factors relating to the formulation and implementation of national security policy. Communicative skills are stressed throughout the entire AFROTC curriculum. The junior and senior cadets meet for four hours each week. Completion of the GMC is normally required as a prerequisite to entering the POC. Transfer students and other students unable to participate in the on-campus GMC may substitute a six-week field training period for this requirement. Veterans can be awarded full credit for the freshman and sophomore courses and may enter the POC, based on their active military experience. Application for the six-week field training session must be accomplished by April 1 preceding the fall quarter in which the student becomes a junior.

All students must complete one field training course, conducted at an active Air Force base during the summer months. There are two types of courses available, depending upon which program the student anticipates entering, two-or four-year. The two-year program requires a six-week field training course prior to entering the POC. The four-year program requires a four-week course to be completed normally between the sophomore and junior years.

Women Cadets

Air Force ROTC offers its full range of programs to women cadets, with the exception of flight instruction. Women cadets are eligible to compete for AFROTC college scholarships and they receive the same benefits as their male counterparts. Commission as an officer (second lieutenant) is tendered at the time the University grants the bachelor's degree.

Placement Credit

Students who have completed ROTC courses in essentially military preparatory schools or junior colleges may be given appropriate credit. Students who have taken high school ROTC should contact the professor of aerospace studies for placement. Individuals with prior service may also be given placement credit.

Selection for the POC

Selection for the POC is based on interest in the Air Force together with achievement records of academic ability, observed leadership traits, and the results of a mental officer qualification test and physical examination. Schedules for these tests are announced through normal student advisory media.

Pay

When attending either field training course, a student is furnished transportation or payment for travel plus pay at the current rate of approximately $300 per month. He is furnished all uniforms and receives free medical and dental care while at field training. A non-taxable allowance of $100 per month during two academic years is paid to POC cadets. This fee is in addition to any other scholarship benefits held by students.

Scholarships

The College Scholarship Program (CSP) is available to selected four and two year students participating in AFROTC programs. This scholarship consists of full payment of tuition, fees, full reimbursement for all required books and the monthly allowance of $100 mentioned above, for each scholarship year. Scholarship consideration is predicated on student ability, performance and potential.

Flight Training

Volunteers who are accepted for Air Force pilot training upon graduation, will enter the Flight Instruction Program during their final year of college. These students will receive aviation ground school and 25 hours of flying lessons at government expense. This program helps to prepare cadets for follow-on Air Force pilot training after graduation and provides an opportunity to qualify for an FAA Private Pilot license prior to graduation.

Student Obligations

When entering the professional officer course, a student must have at least two full academic years remaining to complete his college requirements for an undergraduate or a graduate degree or a combination of the two. Each POC student is required to enlist in the Air Force Reserve and to execute a written contract with the government. This contract requires a student to complete the POC and to accept a commission as a second lieutent if tendered.

Air Force ROTC Uniforms and Fees

Students enrolling in the Air Force ROTC will be issued uniforms through the ROTC Uniform Store as outlined below:

A. GMC Cadets—Basic:

    (1) GMC cadets will be issued uniforms on a loan basis. These uniforms will be retained by the cadet throughout the basic ROTC course. Uniforms must be turned in to the ROTC Uniform Store, Room 103, Hardman Hall, by the cadet upon completion of the basic course, or when the cadet drops or is dropped from the Air Force ROTC program. Shoes, socks, and gloves become the property of the cadet at time of issue. Rank insignia will be

issued to GMC cadets on a loan basis.

(2) A $4 account fee will be charged each GMC cadet and is payable prior to being issued a uniform.

B. POC Cadets—Advanced:

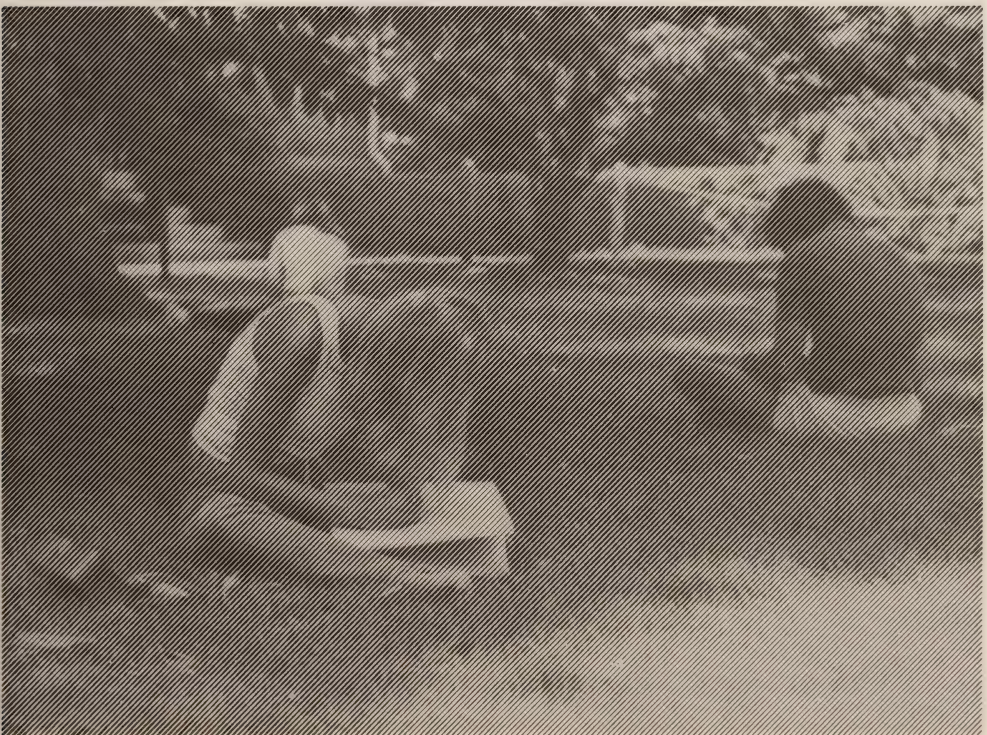
(1) POC cadets will receive a new uniform at time of entry into the POC course. Shoes, socks, and gloves become the property of the cadet at time of issue. Rank insignia will be issued to POC cadets on a loan basis.

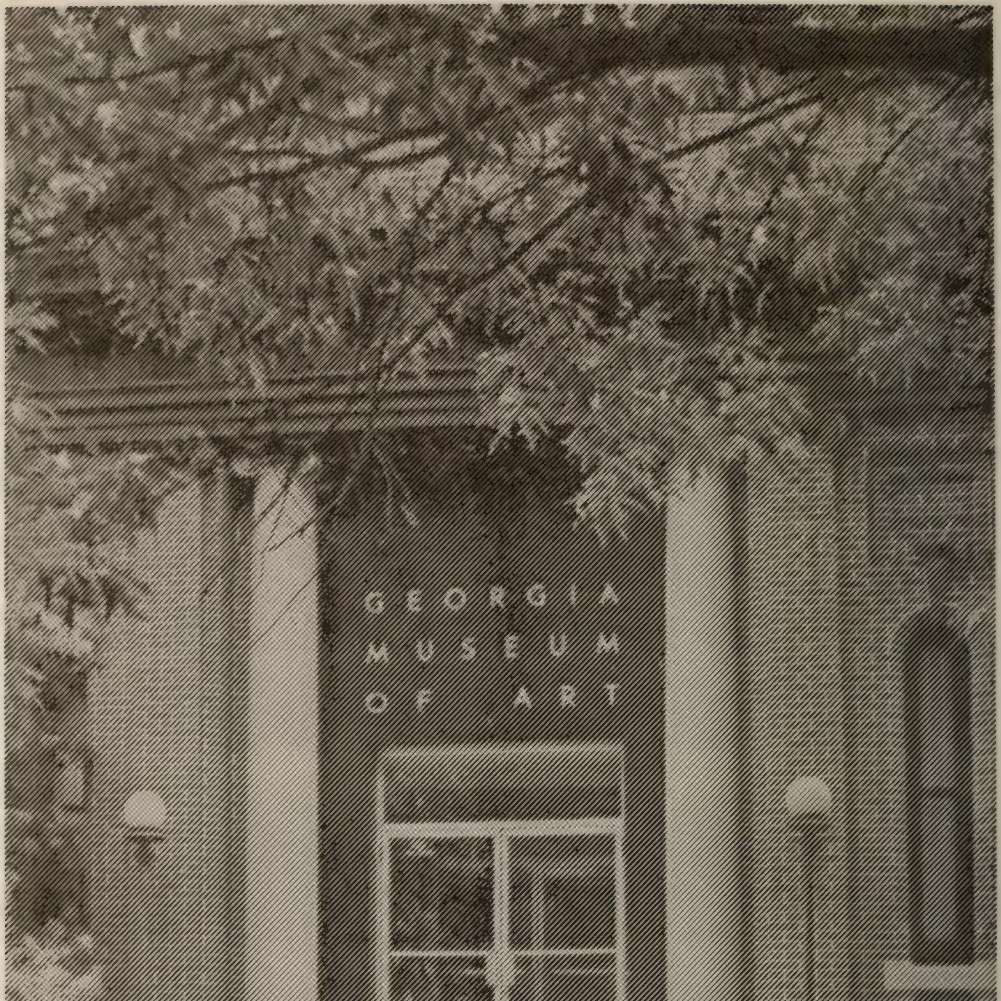
(2) POC cadets will be afforded the opportunity to purchase their uniform prior to being commissioned in the U.S. Air Force. Purchase price will be approximately 60% of initial cost. POC cadets discharged from the ROTC program prior to being commissioned will return their uniform to Room 103, Hardman Hall.

(3) A $4 account fee will be charged each POC cadet and is payable prior to being issued a uniform.

C. Charges

Cadets are held personally responsible for all uniform items and accouterments issued. They must provide proper care and safeguards for these items. The cadet concerned will be assessed for the cost of any item lost, destroyed, or mutilated. A cadet not completing six quarters of basic and/or advanced ROTC at this institution will be charged $5 for cleaning and alterations; and for shoes, socks, and gloves if issued.

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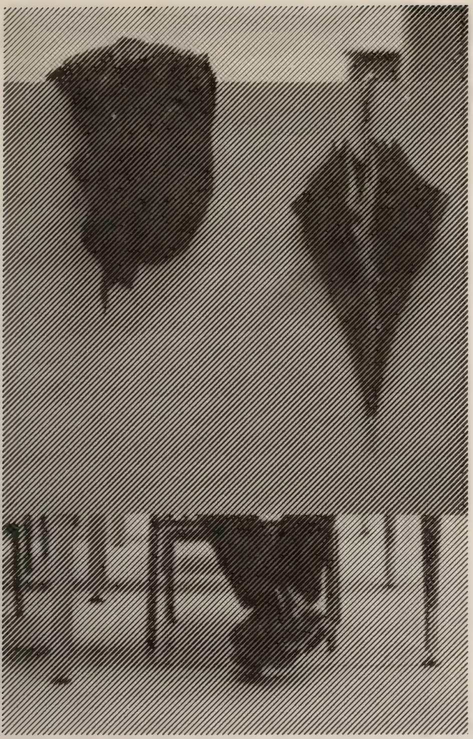

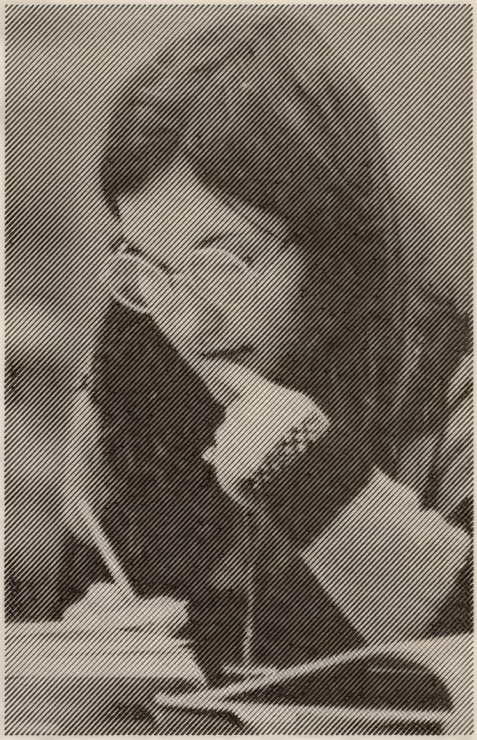

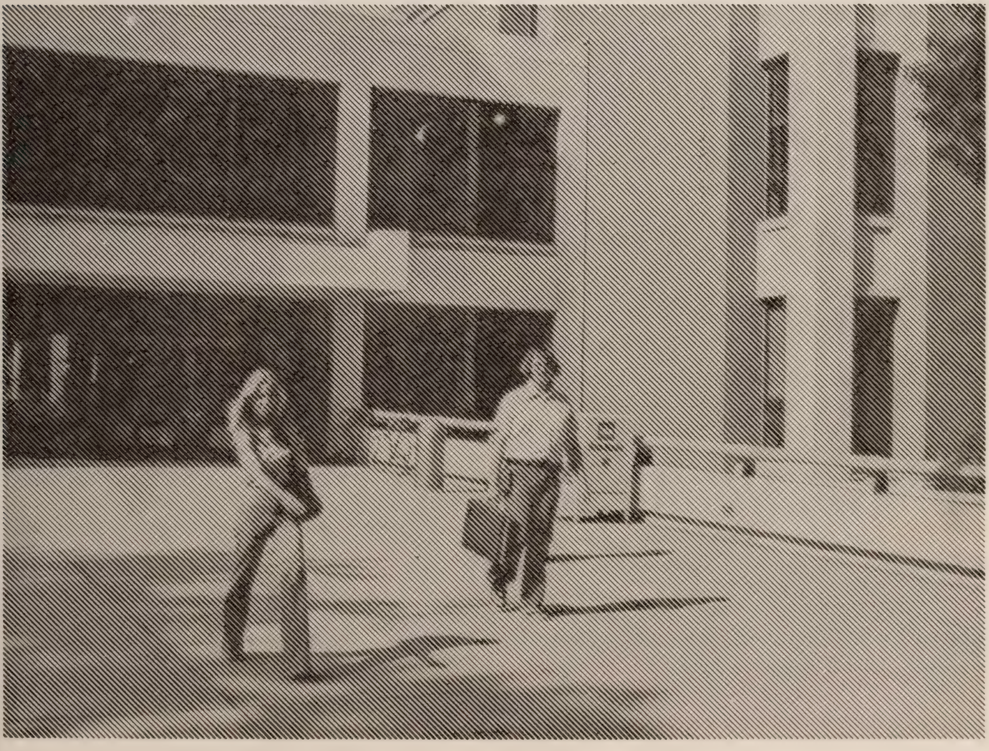

UNDERGRADUATE COURSES OF INSTRUCTION

Course descriptions for all schools and colleges of the University are listed within this section. Schools and colleges are arranged in alphabetical order; departments within each school and college are also in alphabetical order. To find a particular course, look for the school or college under which it is taught and, subsequently, the department under which it would fall. In some cases, only the number and title of a course are given with a cross reference in parenthesis. This cross referencing tells under which school or department the complete course description will be given. Courses numbered from 1 to 99 are either non-credit or remedial courses; those from 100 to 199 are designed for freshman and sophomore (junior divison) students; those numbered 200 to 299 are mainly sophomore courses but, in special instances when justified by course and curricular requirements, may be given senior division (junior and senior) classification. Courses numbered 300 to 399 are generally designed for mixtures of junior and senior division students. Courses taken by juniors and seniors along with graduate students carry the numbers 400 to 599. Following is a list of regulations governing all courses:

1. The University reserves the right to withdraw any course for which the registration is not sufficient, and to offer courses not here listed, if sufficient demand arises and if teaching facilities and personnel are available.
2. New curricular materials and degree requirements may be in process and may not be reflected in this bulletin. Students are therefore urged to obtain these materials from their academic advisor or dean's office.
3. Unless otherwise indicated, all courses will meet five times a week and carry five hours credit.
4. Honors courses are designated with suffix "H".

Graduate courses of instruction are listed in the Graduate School Bulletin. Courses of instruction in the professional schools and colleges of the University (School of Forest Resources, School of Law, School of Pharmacy, School of Social Work, and College of Veterinary Medicine) are listed in the bulletin prepared especially for each of these units.

COLLEGE OF AGRICULTURE

AGRICULTURE (AGR)

101. Orientation to Agriculture. 1 hour.
A course designed to aid agricultural freshmen and transfer students adjust to life at the University. (Open to students during their first quarter on the Athens Campus.)

301, 301L. Agriculture and You.
A course designed to delineate modern agriculture and the integral role it plays in providing man a quality life. Attention is focused on the role of agriculture in economic development; the U.S. Food and fiber production resource base; production methods, practices and standards; the marketing and distribution system; man's dietary needs and consumption behavior; and the world food and fiber situation.

391 Applied Agricultural Science (Internship).
Prerequisite: Basic courses in the student's major, permission of department head, and junior or senior standing.
This course provides educational experience in the operations and management of commercial firms.

AGRICULTURAL ECONOMICS (AEC)

Head: Brannen. *Staff*: Ames, Broder, Brown, Clifton, Frazier, Jones, Miller, Musser, Nixon, North, Saunders, Thompson, Thorne, White, Williams, Wise.

210. Agricultural Economics.
A study of the principles of agricultural economics and the applications of these principles to the solution of agricultural and farm business problems.

300. Economics of Agriculture: Theory of the Firm.
Elementary principles of economics as applied to decision making in agricultural production and distribution, prices, interest and credit, demand and supply, and comparative advantage.

301. Farm Organization and Management.
Three lectures and two laboratory periods.
Prerequisite: AEC 300, or consent of instructor.
A scientific approach to the study of individual farm programs for the purpose of determining methods to be used for increasing farm income.

302. Economics of Agriculture: Aggregate Analysis.
Prerequisite: AEC 300, or consent of the instructor.
A study of the determination of national income, aggregate employment, the price level and of fluctuations in, and growth of, total output with emphasis on agricultural adjustments in a changing economy.

304. Economics of Agricultural Marketing.
Prerequisite: AEC 300 or consent of instructor.
A general course in marketing farm products describing and analyzing marketing functions to have a comprehensive understanding of the principles of agricultural marketing.

340. Introduction to Agricultural Policy.
Prerequisite: AEC 300 or consent of instructor.
An analysis of agricultural policy as formulated by federal and state governments including the objectives, procedures and effects of adopted and proposed agricultural programs.

351. Agricultural Credit.
Prerequisite: AEC 300 or consent of instructor.
An application of the techniques and principles of finance of the farm firm and a study of needs, sources and problems associated with credit and capital use among individual farm business units.

364. Land Economics.
Prerequisite: AEC 300 or consent of instructor.
An appraisal of the agricultural use of land in the United States. Designed to meet current needs for training in application of economics to use of land by farmers under changing political and social conditions.

391. Agribusiness Internship.
Prerequisite: Junior standing and consent of department head.
This course provides educational experience in the economics of management of a farm or agribusiness firm.

393. Public Regulatory Institutions in Food and Agriculture.
Prerequisite: Junior standing or consent of instructor.
An evaluation of the role of government in a progressive and affluent society with emphasis on the environmental and regulatory policies imposed on the food and agricultural sector.

400. Cooperative Business Organizations.
Prerequisite: AEC 300 or consent of instructor.
Economic nature of a cooperative; advantages of pooling business volume; appraising cooperative performance; cooperative, economic and business management principles.

401. (AET) Rural Organizations.
Prerequisite: AEC 300 or consent of instructor.
History of agricultural organizations; study of selected rural agencies and organizations; and a study of the relationship between organizations of rural people and their economic well being.

402. Advanced Farm Organization and Management. Five lectures (with a few special field trips per quarter).
Prerequisite: AEC 300 or consent of instructor.
Analysis of economic facts of individual farm plans and formation of economic models which postulate optimum allocation of land, labor, and capital as guides for maximum revenue.

403. Marketing Livestock and Livestock Products.
Prerequisite: AEC 300 or consent of instructor.
An economic study of livestock marketing with emphasis on functions of marketing, prices, regulations, and the institutions that implement the marketing of livestock.

408. Economics of Agricultural Labor Utilization.
Prerequisite: AEC 300 or consent of instructor.
Concepts, principles and techniques for improving the economic efficiency of work performance in agricultural firms, with emphasis on labor requirements and crew balance; work methods and equipment selection; layout and materials handling; employee selection, training and motivation; and budgetary analysis of alternatives.

421. Agricultural Adjustments and Resource Development.
Prerequisite: AEC 300 or consent of instructor.
The application of fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

451. Farm Appraisal.
Prerequisite: AEC 300 or consent of instructor.
An application of the methods of appraisal to farm property. A study of the factors influencing farm land and building values, relationship of land use, soils, crops, livestock, buildings, and other factors to farm value.

458. Intermediate Economic Principles.
Prerequisite: AEC 300 or consent of instructor.
Price theory and its role in the allocation of resources in competitive and imperfect markets.

460. Economics of Rural Environmental Quality.
Prerequisites: AEC 300 or consent of instructor.
An appraisal of efficiency and equity impacts of rural environmental problem solutions in existing social, economic and political structures. An analysis of general concepts and techniques for the evaluation of alternative pollution abatement policies in relation to changing social, economic and political structures.

461. Quantitative Techniques in Agricultural Economics.
Prerequisite: AEC 300 or consent of instructor.
The application of basic quantitative techniques to agricultural economic theory, emphasizing basic models used in the study of prices, marketing, and production.

467. Agricultural Prices.
Prerequisite: AEC 300 or consent of instructor.
The integrated use of price theory and statistical techniques to analyze the behavior of prices, with special emphasis on the prices of agricultural commodities.

469. Agri Finance.
Prerequisite: AEC 300 and ACC 110 or 116, or consent of instructor.
A study of financial problems of agricultural businesses, including budgetary analysis of financial requirements; financial statements; sources, costs and management of funds; risk reduction.

471. Resource Analysis of Agricultural Businesses.
Prerequisite: AEC 300 or consent of instructor.
The relationship of inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

480. Water Resource Economics.
Prerequisite: AEC 300 or consent of instructor.
Economic aspects of the use, supply, development and management of water resources; emphases on river basin and project planning, benefit-cost analyses, water demands, and multiple use management of water resources.

487. (FIN/MKT) Commodities Markets.
Prerequisite: Junior standing or consent of instructor.
Development, functions, and importance of commodity markets; principles and mechanics of trading commodities on future markets. Includes study of speculation, hedging, and roles of commission houses, commodity exchanges, clearing houses. Analysis of technical and fundamental trading theories and use of future contracts as instruments for financing business activities.

502. Management in Agriculture.
Prerequisite: AEC 300, or consent of instructor.
A study of the principles used in making management decisions and the application of these principles in agriculture.

AGRICULTURAL EDUCATION (EAG)*

Head: O'Kelley, *Staff*: Dickerson, Weaver.

335. Curriculum Planning in Agricultural Education.
Prerequisite: EPY 304 or 305 and consent of instructor.
Determining curriculum content and planning instructional programs in vocational agriculture for high school and adult groups based upon their needs and interests. Directed observation in selected schools.

336. Teaching Procedures in Agricultural Education.
Prerequisite: EPY 304 or 305, EAG 335 and consent of instructor.
Study and evaluation of teaching procedures and techniques which might be used in teaching vocational agriculture to high school and adult groups. Directed observation and planning for student teaching.

349. Seminar in Agricultural Education.
3 hours. Prerequisite: Student teaching.
A seminar dealing with problems emerging from experiences in apprentice teaching. Emphasis will be placed upon the planning of school programs and the place and responsibility of the teacher in the school.

400. Special Problems in Agricultural Education. 1–10 hours.
Prerequisite: Departmental enrollment.
Specialized training appropriate to the needs of the individual, involving intensive library investigation or the collection and analysis of data pertinent to a given problem.

505. Problems of Teaching Agricultural Education.
Instructional procedures and evaluation of teaching in terms of pupil growth.

546, 547, 548. Student Teaching in Agricultural Education. 5 hours each.
Prerequisite: EPY 304 or 305, EAG 335 and 336.
Prospective teachers of vocational agriculture are placed as student teachers in carefully selected schools of the state for an entire quarter. During this period they are carefully supervised in dealing with the problems of teaching vocational agriculture.

AGRICULTURAL ENGINEERING (AEN)

Head: Brown. *Staff*: Allison, Chesness, Clark, Cobb, Harris, Law, McLendon, Neuwirth, Perry, Ratterree, Rice, Smith.

109. Engineering Graphics. Five 2-hour laboratory periods.
Use of drawing instruments, lettering, orthographic and pictorial drawing, concepts of descriptive geometry, and working drawings.

120. Engineering Materials and Manufacturing Processes. 2 hours. Two 2-hour laboratory periods.
Prerequisite: AEN 109.
Structure and characteristics of metals, woods, and plastics as engineering materials; process principles and practices for manufacturing products made of these materials.

121. Engineering Measurements. 3 hours. Three 2-hour laboratory periods.
A study and evaluation of methods, instruments

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*Courses taught in College of Education.

and computations related to leveling, taping, direction determination, curve layouts and land surveying.

190. Freshman Seminar. 1 hour.
Agricultural engineering survey and orientation.

202. Engineering Shop. 3 hours. Two 3-hour laboratory periods.
Co-requisite: Agricultural Engineering 109.
Machine tool work, cold metal work, carpentry, and oxyacetylene and arc welding.

300ABCDEF. Cooperative Work Experiment. 1 hour each.
Coordinated and planned work experience with cooperating industries or agencies.

325. Soil and Water Engineering. Four lectures and one 2-hour laboratory period.
Prerequisite: Agricultural Engineering 356.
Engineering analysis and design of soil, water and plant systems for erosion and flood control, drainage, and irrigation.

342. Computer Applications in Engineering. 3 hours.
Prerequisite: MAT 255.
Applications of digital computer programming to engineering problems.

350. Statics of Engineering.
Prerequisite: MAT 254 and PCS 127.
Force systems, resultants, equilibrium, friction, centroids, and moments of inertia.

351. Dynamics of Engineering.
Prerequisite: AEN 350 and MAT 255.
A study of the motion of rigid particles and bodies under the action of balanced and unbalanced force systems. Includes force, mass, and acceleration, work and energy, and impulse and momentum methods.

355. Strength of Materials.
Prerequisite: AEN 350.
Elements of stress analysis, resistance, and design as applied to engineering materials and structures.

355A. Strength of Materials Laboratory. 1 hour. One 2-hour laboratory.
Concurrently: AEN 355.
Development and application of experimental techniques to determine the parameters necessary for an understanding of the elastic and plastic behavior of engineering materials.

356. Fluid Mechanics. Four lectures and one 2-hour laboratory.
Prerequisite: AEN 351.
Elements and engineering applications of the laws of fluid behavior; statics, kinematics, and kinetics of fluids.

358. Engineering Systems Design. 3 hours.
Case studies of farm materials handling systems with particular emphasis on the analysis and synthesis of the complete system, its optimization, alternates, and governing parameters.

360. Engineering Design Practices. 2 hours.
Prerequisite: Junior standing in engineering.
The engineering design procedure is discussed from project inception to final design. Emphasis is placed upon the elements and techniques required for preparing professional engineering design reports.

361. Management of Plant Environment. Four lectures and one 2-hour laboratory.
Prerequisite: AEN 351.
The managing of plant environments including soil, moisture, heat, air. The plant and machine interactions having effects on planting, tillage and harvesting of crops.

362. Energy Conversion. 3 hours. Two lectures and one 2-hour laboratory.
Prerequisite: AEN 373.
Principles of conversion and transmission of energy. Conversion from chemical to mechanical to electrical and transfer by mechanical, electrical, and hydraulic means.

370. Waste Management Principles and Practice.
Prerequisite: AEN 374.
The properties and characteristics of wastes are discussed with emphasis on agricultural wastes. Engineering parameters are treated that quantify the various aspects of waste management. Physical and biological treatment processes and systems are described with opportunity given for engineering design.

371. Agricultural Structure Design. Four lectures and one 2-hour laboratory.
Prerequisite: AEN 355, 355A.
Environmental, space, and structural design of farm structures; cost estimates and specifications.

373. Thermodynamics. 3 hours.
Prerequisites: MAT 254, PCS 127.
The first and second Laws of Thermodynamics and their engineering applications. Ideal gas law, non-flow and steady flow processes, power and reversed cycles, two phase systems and the psychorometric chart.

374. Heat Transfer. Four lectures and one 2-hour laboratory.
Prerequisite: AEN 373.
The theory of heat transmission by conduction, convection, and radiation in the steady and unsteady states. The solution of engineering problems involving heat transfer.

381. Processing. 3 hours. Three lectures.
Prerequisite: AEN 374.
Methods of processing agricultural products, including sizing, cleaning, sorting and drying. Fundamentals of materials handling with emphasis on process analysis and plant design.

382. Management of Structural Environments for Agricultural Production. 3 hours. Two lectures and one 2-hour laboratory.
Prerequisite: AEN 374.
Animal bioenergetics, environmental factors affecting animal productivity, heat and vapor flow in buildings, design of ventilation systems, heating and cooling loads for buildings.

383. Electric Circuits. Four lectures and one 2-hour laboratory.
Prerequisite: MAT 255, PCS 128.
Fundamentals of electric and magnetic circuits, networks, and network theory as related to direct current, single phase alternating current and polyphase alternating current circuits.

385. Electrical Machines. 3 hours. Two lectures and one 2-hour laboratory.
Prerequisite: AEN 383.
A laboratory analysis of the operating characteristics of transformers, alternators, polyphase motors, single phase motors and DC generators and motors.

387. Engineering Electronics. Four lectures and one 2-hour laboratory.
Prerequisite: AEN 383.
Electronic devices, including transistors, with particular emphasis on the design of circuits for small signal amplifiers, relays, electronic timers, photo-electric devices and solid state electronics.

392. Senior Seminar. 0 hours.
Engineering seminar required of engineering students.

394. Engineering Economics, Contracts and Specifications.
The mathematics of investment; decision making between alternatives; depreciation and book value; calculating rates of return; sinking and incremental costs. Basic principles of contract and specifications.

411. (FS) Food Engineering Fundamentals. Three lectures and two 3-hour laboratory periods.
Prerequisites: MIB 350, FS 200 or 409, and CHM 340 or consent of the instructor.
Mass and energy balance, fluid flow, heat transfer and refigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

412. (FS) Food Engineering Fundamentals. Three lectures and two 3-hour laboratory periods.
Prerequisite: FS 411.
Continuation of FS 411. Covers phase equilibria in foods, evaporation deaeration, drying, filtration, size reduction, mechanical speration processes, agglomeration, and process control.

441. Electrical Systems and Controls. Three lectures and two 2-hour laboratory periods.
Prerequisite: AEN 383 and AEN 360.
The design of electrical systems for agricultural production and processing applications which involve electrical energy for light, heat, power, control, radiation and measurement with special emphasis on the design and utilization of control systems.

443. Mechanical Harvesting Systems. Three lectures and two 2-hour laboratory periods.
Prerequisites: AEN 360, AEN 371, AEN 362.
Case studies of design of existing machinery. Design and selection of machine components and harvesting systems. Application of principles of mechanics and physical properties of materials to mechanical system design.

444. Water Management Systems. Four lectures and one 2-hour laboratory.
Prerequisite: AEN 325 and AEN 360.
An engineering design course utilizing the principles of hydrology, hydraulics, soil mechanics, erosion control, and economics in designing a multiple-use water management system for a rural and/or urban watershed.

445. Countryside Development Engineering.
Prerequisite: AEN 360.
Engineering design of water and waste systems, recreational areas, lighting and roads, including sociological and regulatory aspects, as related to planned development of the countryside.

446. Planning of Agricultural Industries.
Prerequisite: AEN 374 and AEN 360.
Basic factors in planning and design for an agricultural industry will be studied. Students will be required to plan at least two agricultural industries. Plans will include pertinent drawings, specifications for equipment and all other information required for plans to be properly effected.

448. Instrumentation for Environmental Quality. Three lectures and two 2-hour laboratory periods.
Prerequisite: AEN 360.
A study of the basic principles of operation of instrumentation used to measure physical vari-

ables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous contaminants, odor and noise will be emphasized.

501. Agricultural Engineering Applications.
Prerequisite: ET 303 and EDU 336, or AEC 300 or equivalent.
The application of engineering techniques to agricultural production and utilization practices, with emphasis on the organization, management, and physical facilities for agricultural mechanics activities on farms, in secondary schools, and in related agricultural business occupations.

503. Functional Planning of Farm Structures and Utilities.
Prerequisite: ET 365 and AEC 300 or equivalent.
Basic problems in planning farm structures for typical agricultural enterprises in the southeast; development, storage, treatment and distribution of farm water supplies; and the collection and disposal of sewage and farm wastes.

504. Modern Farm Power and Machinery.
Prerequisite: ET 360 and AEC 300 or equivalent.
Characteristics and principles of farm tractors and power units, both self-propelled and tractor-drawn, and related machinery. Emphases are on selection, operation, care maintenance, and management.

505. Soil and Water Conservation. 3 hours. Three lectures.
Prerequisite: ET 320 and AEC 300 or equivalent.
Technical aspects of soil and water conservation methods; planning and management of drainage, irrigation, and erosion control measures.

506. Electic Power and Control. 3 hours. Three lectures.
Prerequisite: ET 380 and AEC 300 or approval of instructor.
Principles of selection, installation, and maintenance of electric motors, controllers, automatic control systems, and electric heating and cooling equipment; electric measurements as evaluation techniques.

507. Farm Materials Handling. 3 hours. Three lectures.
Prerequisite: AEN 506.
Selection and evaluation of equipment for conveying grinding, mixing, separating, drying and storing farm products. Emphasis is placed on planning complete materials handling systems.

508. Special Problems in Agricultural Engineering Technology.
Prerequisite: Three courses in engineering technology and consent of instructor.
A detailed study of a special area of mechanized agriculture with emphasis on concepts, fundamentals, processes, limitations, and testing of approved problems.

Courses in Engineering Technology for Non-Engineering Students (ET)

303. Wood and Masonry Technology.
Five 2-hour laboratory periods.
Development of basic understanding and skill in wood and masonry work; selection, care and use of materials, hand tools, and power equipment; plans, sketches and drawings; wood working and carpentry; concrete and masonry; painting and wood finishing.

307. Metal Technology. Five 2-hour laboratory periods.
Development of basic understanding and skill in metal work; selection, care, and use of materials, hand tools, and power equipment; cold and hot metal work; gas and arc welding; plumbing; soldering; surface finishing, and service centers.

310. Surveying. Five 2-hour laboratory periods.
Prerequisite: MAT 101.
Surveying methods, instruments, and computations related to field problems in taping, leveling, directions, curves, and land surveying.

320. Drainage, Irrigation, and Erosion Control.
3 hours. Two lectures and one 2-hour laboratory.
Principles and methods of drainage, irrigation, and erosion control systems.

328. Soil and Water Technology.
Prerequisite: ET 320 or equivalent.
Planning and design of water disposal, drainage, irrigation systems and waste management as it affects water management.

360. Farm Power Machinery. 3 hours. Three lectures.
The operation, care, repair, and selection of farm machinery and tractors for use on farms.

365. Farm Buildings and Equipment. 3 hours. Three lectures.
A study of farm buildings, equipment, and facilities with emphasis on space, material, sanitary, managerial, and cost requirements.

380. Farm Electrification. 3 hours. Three lectures.
Applications of electricity to agriculture; wiring systems for farm buildings; selecting, using, and controlling electrically operated equipment in farming operations.

AGRICULTURAL MECHANIZATION TECHNOLOGY (AMT)

200. Applied Graphics and Plan Interpretation. Five 2-hour laboratory periods.
Principles and practices in lettering, multi-view projections and dimensions, working drawings and layouts; interpretation of specialized plans, schematic diagrams and conventional representations, maps, charts, and graphs.

201. Construction Materials and Tool Processes. Three lectures and two 2-hour laboratory periods.
A study of the fundamentals and uses of metals, woods, concretes, concrete products, and plastics as materials of construction; tools and manufacturing processes for changing sizes, forms, and surfaces; organization and management of tool and machines.

321. Hydraulics in Agriculture. Three lectures and two 2-hour laboratory periods.
Prerequisite: Junior standing.
Transmission, storage, and utilization of energy by means of fluid machines; fundamentals and operations of hydraulic systems used in farm power units and machines, motors, and drives, environmental control equipment, and fans and sprayers.

331. Structures and Environment. Three lectures and two 2-hour laboratory periods.
Bioenergetics of animal response to thermal environments, psychrometrics, heat and moisture balances in buildings, selection of ventilation systems components, waste management systems, farmstead layout, loads on buildings, functional planning selection of materials, and operation of modern structures.

341. Handling and Processing Agricultural Products. Three lectures and two 2-hour laboratory periods.
Prerequisites: Junior standing.
Fundamentals and operation for handling agricultural materials in bulk and packaged forms; processing principles and procedures; selection of equipment; development of systems, determination of cost.

342. Utilization of Electric Power and Equipment. Three lectures and two 2-hour laboratory periods.
Prerequisite: Junior standing.
Fundamentals and utilization of electric power through appropriate units of equipment and systems for heating, cooling, working, and controls; energy transmission and measurements; equipment selection, operation, maintenance, and evaluation for given tasks.

351. Production and Harvesting Technology. Three lectures and two 2-hour laboratory periods.
Prerequisite: AMT 321.
A study of the design and operational technology of modern machinery, power units and tractors used in the production and harvesting of major field crops; equipment selection for systems farming; economic and technical management for efficient machine performance, control, and safety.

AGRICULTURAL EXTENSION (AET)

313. Agricultural Extension Organization and Procedures.
Prerequisite: Two or more senior division courses.
Philosophy, procedures, and practices of cooperative extension service work in agriculture and home economics; organization, administration, and financing; relationships with cooperating and related organizations and agencies; qualifications, duties, and responsibilities of cooperative extension service personnel.

314. Agricultural Extension Service Programs.
Prerequisite: AET 313.
Scope and nature of cooperative extension service programs at national, state, and county levels; emphasis upon techniques, policies, and procedures for developing cooperative extension service programs as basis for work of county extension agents; activities involved in carrying out programs; evaluation of efforts and results obtained.

391. Internship in Cooperative Extension.
Prerequisite: Permission of instructor.
This course provides practical experience in Cooperative Extension Service operations while engaged as a 4-H camp counsellor, as a student aide, or otherwise in a Cooperative Extension Service program effort.

401. (AEC) Rural Organizations.
Prerequisite: AEC 210, PS 101, and two senior division courses in agricultural economics or economics.
History of agricultural organizations; study of selected rural agencies and organizations; and a study of the relationship between organizations or rural people and their economic well being.

505. Communication in Extension Work. 2 hours.
The use of communications media in coopera-

tive extension work with special emphasis on radio and television.

507. Program Building in Extension.
A study of the basic problems, principles and procedures involved in program development in cooperative extension work.

508. Agricultural Extension Administration.
A seminar in the organization, administration, operation, and evaluation of the cooperative extension service and its educational programs.

AGRONOMY (AGY)

Head: Colville. *Staff*: Ashley, Beaty, Boerma, Box, A. Brown, R. Brown, Bruce, Elsner, Fleming, Giddens, Leonard, Morris, McCreery, Parkman, Perkins, Reed, Sumner, Tan, Todd, Weaver, Wilkinson.

201. Crop Science.
Prerequisite: BOT 121 or BIO 101.
A fundamental course in crop science, including the major agricultural areas of the United States and emphasizing the crops of the Southeast. A study of the principles of production of agricultural plants, including classification, morphology, reproduction, growth, and improvement.

210. Principles of Soils.
Prerequisite: Two courses in freshman chemistry.
Soil formation, physical, chemical, and biological properties of soils, commercial fertilizers, lime and organic matter; and soil management practices.

310. Soil Physiography.
Characteristics of major physiographic landscape features and relationships with soil formation and classification. Physical, chemical and biological properties of soils. Fall and Winter quarters.

321. Forage and Pasture Crops.
Prerequisite: AGY 201, 210.
The characteristics, origin, variation, adaptation, and culture of the important grasses and legumes. Fall and Winter quarters.

334. Cereal Crops.
Prerequisite: AGY 201, 210.
Characteristics, cultural practices, harvesting, processing, marketing, utilization and improvement of cereal crops. Spring Quarter.

335. Oil, Fiber, Sugar and Aromatic Crops.
Prerequisite: AGY 201, 210.
Description of the basic principles involved in economic production of fiber, oil, sugar, and aromatic crops. Winter Quarter.

369. Management of Turf I.
Prerequisite: One course in biology and permission of instructor.
A study of turf grasses and growth requirements. The various operations, equipment, materials, and work program for the proper and efficient maintenance and management of turf for golf courses and other specific uses. Spring Quarter.

391. Agronomy Internship. 1–5 hours.
Prerequisite: Three senior division courses and permission of the department head.
This course is designed to give interested and well prepared students needed experiences in agronomic production, agribusiness, research, instruction and service organizations.

399. Special Problems in Agronomy. 2–5 hours.
Prerequisite: Ten hours in agronomy courses 300 or higher and permission of the instructor.
Research on agronomic problems conducted in laboratory, field or library; report required, directed by agronomy staff.

401. Seed Technology.
Prerequisite: CHM 261 and BOT 380, or equivalent.
Seed and seedling structure, viability and vigor of seed; physiology of germination; dormancy; hard seeds; moisture determination; storage and longevity. Winter quarter.

423. Principles of Experimental Methods.
Prerequisite: Two senior division courses in agronomy or equivalent.
Principles and practices in plant and animal research with special reference to the design of experimental plots. The applications of statistical methods to laboratory and field results are emphasized. Fall quarter.

425. Pasture Development and Management.
Prerequisite: AGY 321 and one other senior division course.
Fundamental principles and theories of establishment and growth; production and utilization of pasture plants; types of pastures; principles of biological adaptation and management for production and conservation. Winter quarter.

427ABC. Agronomy Seminar. 1 hour each.
Topics relating to crops and soils to be discussed, including literature review and research results. Two hours required of all agronomy senior students.

434. Principles of Chemical Weed Control.
Prerequisite: CHM 261, BOT 380.
A study of principles of application, selectivity and metabolism of herbicides. Fall and spring quarters.

454. Soil Morphology and Classification.
Prerequisite: Two senior division courses in agronomy or equivalent.
Morphological characteristics of soils, factors influencing these characteristics and classification of soils of the U. S. Several full-day field trips will be required at the student's expense (total cost about $25). Spring quarter.

458. Land Use and Soil Conservation.
Prerequisite: Two senior division courses in agronomy or equivalent.
The application of soil management to land use planning and soil conservation. Fall quarter.

459. Soil Fertility and Fertilizers.
Prerequisite: Two senior division agronomy courses.
Soil conditions affecting availability of plant nutrients; properties and utilization of commercial fertilizers.

460. Soil Physics.
Prerequisite: AGY 210 and one course in physics.
Physical properties, moisture relations, and methods of physical analysis of soils. Winter quarter.

461. (MIB) Soil Microbiology.
Prerequisite: MIB 350 or equivalent.
Study of characteristics and activities of microorganisms inhabiting the soil. Spring quarter.

462. Wastes and the Soil. 2 hours.
Prerequisite: Permission of the instructor.
A study of the adsorption, transformation and movement of organic and inorganic wastes in soils and some problems in waste disposal. Winter quarter.

463. Soil Mineralogy.
Prerequisite: AGY 210.
Study of the mineral composition of soils and the relationship of the mineral problems of soil classification, soil physics, soil chemistry, and soil fertility. Winter quarter.

464. Soil for Multipurpose Use.
Prerequisite: Senior or graduate standing and at least two senior division courses in physical, chemical or biological sciences.
A study of the soil as an important part of our natural resources with emphasis on genetic properties which influence the soil's use for non-farm purposes and principles involved in developing and managing soils for a quality environment. Summer quarter.

466. Soil and Plant Analysis.
Prerequisite: AGY 459.
Current techniques and methods of interpretation for soil testing and plant analysis. Spring quarter.

ANIMAL NUTRITION (AN)

Adviser: Miller. *Staff*: Britton, Cullison, Fuller, Jensen, Lassiter, Lowrey, Mertens, Neathery, Seerley, Ward.

436. (PS) Ruminant Nutrition.
Prerequisite: AS 330, VPH 310, CHM 240 or consent of instructor.
An in-depth study of digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora-microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption and utilization of nutrients. Provides a framework in which practical applications can be evaluated.

437. (PS) Monogastric Nutrition.
Prerequisite: AS 330, CHM 240, VPH 310 or PS 380.
An advanced course in the comparative nutrition of monogastric animals with special but not exclusive consideration of poultry and swine. Guided studies of the literature of nutrition will be made, enabling the student to witness the discovery of nutrition principles and to distinguish between established fact and unsolved problems.

ANIMAL SCIENCE (AS)

Head: Boyd. *Staff*: Benyshek, Cullison, Hutton, Kiser, Lassiter, Lowrey, Rampacek, Seerley, Ward.

101. Introductory Animal Science. 3 hours.
A study of basic principles and terminology of beef cattle, sheep, swine and horses.

310. Animal Breeding.
Prerequisite: AS 101 and GEN 358.
A study of the basic principles of genetics and statistics as related to the genetic improvement of farm animals.

320. Types, Classes, Grades and Evaluation of Livestock. 3 hours.
Prerequisite: AS 101.
Evaluation of livestock for carcass composition and selection for the breeding herd.

321. Livestock Evaluation and Selection. 3 hours.
Prerequisite: AS 320 or permission of the instructor.
A course which deals with the selection of livestock for the breeding herd and for slaughter. From the students in this course will be chosen

the team to represent the University in the annual Spring Intercollegiate Livestock Judging Contests.

322. Advanced Livestock Evaluation and Selection. 3 hours.
Prerequisite: AS 321 or permission of the instructor.
A continuation of AS 321. From the students in this course will be chosen the team to represent the university in the annual Fall Intercollegiate Livestock Judging Contests.

330. Fundamentals of Animal Nutrition.
Prerequisite: Organic chemistry.
A study of the fundamental principles of animal nutrition.

331. Feeds and Feeding.
Prerequisite: AS 101 and CHM 261, or permission of the instructor.
A study of the composition and properties of the important feedstuffs and the application of the basic principles of nutrition in the use of these feedstuffs in the scientific feeding of farm livestock.

360. Beef Cattle Production.
Prerequisite: AS 310, 331, 440, or permission of instructor.
A study of the breeding, feeding, and management of beef cattle.

361. Swine Production.
Prerequisite: AS 310, 331, 440, or permission of instructor.
A study of the breeding, feeding, and management of swine.

363. Horse Production. 3 hours.
Prerequisite: AS 310, 331, or permission of instructor.
A study of the breeding, feeding and management of horses.

370AB. Research Problems in Animal Science.
2–5 hours each.
Prerequisite: Ten hours in animal science courses 300 or higher and permission of instructor.
For the advanced outstanding undergraduate student who wishes to gain technical experience and/or prepare for a research career. Research on animal science problems conducted in the library, laboratory, or on the experimental farms. Written report to be required, to be directed by members of the animal science staff.

381, 382. Animal Science Seminar. 1 hour each.
Topical discussion of current problems and scientific work in the various fields of animal science.

391ABC. Applied Animal Science (Internship).
5 hours each with permission of department.

410. The Genetic Improvement of Farm Animals.
Prerequisite: AS 310 or equivalent and one other senior division course in animal science or closely related field.
The principles of population genetics—gene frequency, genetic structure and forces influencing populations, population variance, breeding value, selection, relationship among relatives, systems of mating—as they relate to the genetic improvement of livestock.

440. Physiology of Reproduction in Farm Animals.
Prerequisite: VPH 310 and at least one other senior division course in animal science or closely related field.
A study of the physiology of reproduction of farm animals.

530. Advanced Livestock Feeding.
Prerequisite: AS 331 or permission of the instructor.
Limited to candidates for advanced degrees in education or agricultural extension. An advanced course in animal nutrition.

BOTANY

See Botany listings under Arts and Sciences.

DAIRY SCIENCE (DS)

Head: Boyd. *Staff*: Clifton, Fosgate, Loewenstein, Mertens, Speck, Washam.

102. Introductory Dairy Science. 3 hours.
An elementary course in dairying, dealing with the following general subjects: relation of dairying to agriculture; care and handling of milk on the farm; milk secretion; feeding, breeding, judging, and selection of dairy cattle.

323. Dairy Cattle Judging. 3 hours.
A study of the principles and practices concerned with the evaluation of type in dairy cattle, with special emphasis on show ring judging.

324. Dairy Products Judging and Grading. 3 hours.
Scoring and grading of milk, butter, ice cream, cheese, and cottage cheese.

352. Dairy Chemistry. Three lectures and two 2-hour laboratories.
Prerequisite: CHM 111, 112.
A basic study of the chemical and physical properties of milk; analysis of milk and milk products according to standard methods; functions and operation of a dairy control laboratory.

353. Market Milk and Related Products.
The sanitary and legal requirements for producing, handling and processing milk and related products; approved production methods; quality tests; processing operations; plant sanitation and efficiency.

354. Dairy Plant Management.
Fundamental principles of business and factory management practices as used in the dairy industry. Problems of personnel management, production methods, quality control, merchandising, dairy plant design and construction, records and business methods involved in dairy plant operations.

355. Ice Cream Making. Three lectures and two 2-hour laboratories.
Prerequisite: DS 352.
Basic principles of ice cream mix composition, standardization, flavoring, stabilization, processing, freezing, merchandizing, and storage of ice cream, sherbets, ices, and soft-serve dairy products.

357. (MIB) Dairy Microbiology. Three lectures and two 2-hour laboratories.
Prerequisite: MIB 350.
Determination of numbers and types of bacteria; use of microorganisms in the manufacture of dairy products; study of milk fermentations and disease-producing organisms applicable to milk.

362. Dairy Herd Management.
Prerequisite: AS 331.
A study of the effects of environment and its interactions with physiology and inheritance upon performance of the cow and the cost of producing milk. This includes the effects of climate, health, sanitation, forage systems, housing, equipment and waste management.

363. Dairy Cattle Nutrition.
Prerequisite: AS 331.
The application of fundamental knowledge of nutrition, physiology, environment, and economics in the feeding and management of the dairy herd.

370AB. Applied Dairy Science. 2–5 hours each.
A planned and coordinated work-study experience with cooperating dairy enterprises. Designed to give the student a programmed exposure to the best in control, production, and/or processing operations conducted by those most expert in their fields, with supervision by the faculty.

381, 382. Dairy Seminar. 1 hour each.
Topical discussion of current problems and scientific work in dairying.

390. Dairy Cattle Breeding.
Prerequisite: GEN 358.
A study of factors involved in improving the geneotype and phenotype of dairy cattle. Mating systems and techniques, production testing, type classification, sire proofs and pedigrees. Application of genetics, anatomy, endocrinology, and physiology to improvement of dairy cattle.

391A. Dairy Science Internship.
Prerequisite: Permission of department.

441. Artificial Insemination. 2 hours.
Prerequisite: 10 hours in biological sciences; DS 390 or AS 440 or equivalent.
A study of the techniques involved in artifical insemination of farm animals with major emphasis placed on dairy cattle. The principles involved in semen production, collection, evaluation and use for insemination will be discussed.

442. Milk Secretion. 3 hours.
Prerequisite: 10 hours in biological sciences; DS 310 or equivalent.
The application of certain fundamentals of anatomy, biochemistry, and physiology to study of milk secretion. The relationship of various farm practices to maximum milk yields will be discussed from the fundamental standpoint.

452 (MIB). Microbiology for Sanitarians. Three lectures and two 2-hour laboratories.
Prerequisite: MIB 350.
Study of microorganisms in fluid milk and milk products, their relation to spoilage and epidemiology. Inspection and enforcement procedures.

453 (MIB). Microbiology of Fermented Dairy Foods. Three lectures and two 2-hour laboratories.
Prerequisite: MIB 350.
Study of microorganisms utilized in manufacture of cheese, cultured milks, sour cream, and other dairy products. Defects caused by microorganisms and bacteriophages. Flavor development.

ENTOMOLOGY

See Entomology listings under Arts and Sciences.

ENVIRONMENTAL HEALTH SCIENCE (EHS)

Head: Boyd. *Advisor*: Barnhart.

301, 302, 303. Environmental Health Seminar. 1 hour each.

366. Introduction to Environmental Health Science.
Prerequisite: Permission of the instructor.
A broad study of the fundamentals of environmental health, covering environmental control agencies, elements of the environment suffering from pollution, environmental pollutants and their sources, effects of environmental pollution, methods of pollution control, and a general assessment of the costs of environmental pollution.

391ABC. Environmental Health Science Internship. 5 hours each with permission of department.

459 (MIB). Microbiology of Water and Wastewater. Three lectures and two 2-hour laboratories.
Prerequisite: CHM 261, MIB 350.
In-depth study of microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated along with proper storage of samples. Study will be made on effects of different types of waste on microbial population of rivers and streams.

FOOD SCIENCE (FS)

Head: Smit. *Staff*: Ayres, Carpenter, Eitenmiller, Hamdy, Koehler, Lillard, Powers, Rao, Reagan, Toledo.

301. Man and His Food. Three lectures and laboratory.
Historical and philosophical aspects of food processing and its relationship to public health, nutritive value, quality of the finished product, and governmental regulations. Consideration of basic facts, principles and terminology pertaining to most foods and food processes.

315. Food Science Seminar. 1 hour.
Prerequisite: Permission of instructor.
A discussion course, required of all students majoring in the department.

319. Special Problems in Food Science. 1–5 hours.
Prerequisite: Permission of instructor.
This course is available to upper division students to pursue undergraduate research problems in Food Science.

340H. Man's Foods (Honors). Four lectures and one 2-hour laboratory.
Evolution of food processing, study of raw materials, handling of processed foods, supplying nutrient requirements, food spoilage, dangerous or poisonous foods, food regulations and consumerism.

365. Meat and Animal Evaluation. Two lectures and two 3-hour laboratories.
An introduction to meat science; relation to the live animal to its ultimate value as a food product; efficient marketing of live animals, technological and manipulative skills in slaughtering and processing; anatomy, muscle structure and function as indicators of meat quality.

367. Food Industries Survey. Five lectures or field trips.
The study of the sources of raw materials, the processing, storage, and handling of processed foods, and the problems involved in the processing of these products.

368. Meat Processing. Two lectures and two 3-hour laboratories.
Prerequisites: MIB 350.
The theory and practices of meat processing, including curing, smoking and manufacture of sausage products.

386. (PS) Poultry Market Products Technology. Four lectures and one 2-hour laboratory.
Prerequisite: PS 360 or FS 301 or equivalent.
Methods of processing shell, fluid and dried eggs, live and dressed poultry, and packaging and marketing of poultry products.

391. Food Science Internship. 2–5 hours.
Prerequisite: Basic courses in food science and permission of instructors.
This course provides a practical educational experience while working in an operational food industry laboratory or plant.

407. (MIB) Microbiology of Foods. Two lectures and three 2-hour laboratories.
Prerequisite: MIB 350.
Microorganisms in natural and processed foods; their origin, nature, and effects on foods; enumeration; relationship to health.

409. Community and Home Food Preservation. Three lectures and two 2-hour laboratories.
Prerequisite: MIB 350 and CHM 340 or equivalent.
The principles of food preservation will be studied with reference to present practices and possible improved practices. The effect of various methods of food preservation will be

evaluated in terms of public health, food spoilage, food quality, and the nutritional value of the foods.

411. Food Engineering Fundamentals. Three lectures and two 3-hour laboratories.
Prerequisite: FS 301 or 367 or 409 or consent of instructor.
Mass and energy balance, fluid flow, heat transfer and refrigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

412. Food Engineering Fundamentals. Three lectures and two 3-hour laboratories.
Prerequisite: FS 411 or consent of instructor.
Continuation of FS 411. Covers phase equilibria in foods, evaporation de-aeration, drying, filtration, size reduction, mechanical separation processes, agglomeration, and process control.

414. Food Chemistry. Three lectures and two 3-hour laboratories.
Prerequisites: CHM 240 or 340, FS 301, 367, or 409.
A study of the chemical and physical properties of foods.

419 (FDN). Nutritional Aspects of Food Science.
Prerequisites: FS 414, BCH 301, or permission of instructor.
A study of the nutritional properties of food and the effects of modern technology on nutritional quality.

421 (MIB). Environmental Microbiology. Two lectures and three 2-hour laboratories.
Prerequisite: MIB 350.
The role of environment on organisms; agents to retard, inhibit, or stimulate bacteria and their mode of action; dynamics of physical, physiological and chemical factors affecting bacteria and their resistance to antimicrobial agents; isolation of anaerobes and factors affecting sporogenesis, dormancy, spore germination and differentiation.

422. Instrumental Methods of Food Analysis. Three lectures and two 2-hour laboratory periods per week.
Prerequisite: CHM 240.
Spectrophotometric, colorimetric, gas chromatographic, and potentiometric methods of analysis as applied to food will be studied. Emphasis will be placed upon correlation and interpretation of results.

423. Food Packaging and Quality Control. Three lectures and two 2-hour laboratories.
Prerequisite: MAT 101, MIB 350, FS 301 or 367.
The physical, chemical, microbiological and economic problems related to the use of metal, glass, paper, flexible films, and other packaging materials in the food industry. Objectives of statistical quality control, experimental sampling approach to quality control, types of control charts, acceptance sampling and production control.

424. Advanced Science of Meat, Fish, and Poultry Processing. Three lectures and three 2-hour laboratories.
Prerequisite: FS 407, 411, 414.
Advanced theoretical and applied concepts relating to physical, chemical, enzymatic, and microbial changes occurring in meat, fish and poultry products during processing. These will be studied with particular reference to canning, curing, freezing, refrigeration, spoilage of fresh and processed flesh products, and the use and development of by-products.

425. Governmental Regulation of Food Safety and Quality. 3 hours.
Prerequisite: Senior standing.
Role of mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness and nutrition.

426 (FDN). Sensory Principles and Practices. Three lectures and two 2-hour laboratories.
Prerequisite: Permission of instructors.
The sensory properties of foods, methods for the evaluation of color, flavor, texture, appearance and other qualities, the relations of sensory qualities to chemical or physical attributes, and experimental design and the analysis of data will be studied.

HORTICULTURE (HOR)

Head: Jones. *Staff*: Couvillon, Hendershott, Mills, Munday, Natarella, Pokorny, Sparks, Tinga, Vines.

101. General Horticulture. Four lectures and one 2-hour laboratory.
A survey of horticulture with discussions of the principles and practices used in the production of vegetables, fruits, flowers, and ornamentals. Primarily for non-horticultural majors.

201. Indoor Plant Science. Three lectures and two 2-hour laboratories.
A course designed for those desiring a basic understanding of plant growth requirements under modified environmental conditions. Sexual and vegetative plant propagation, the use of fluorescent lights and the application of the principles to floral design for horticultural crafts

are covered. Open only to non-horticultural majors.

301. Fundamentals of Fruit Production. Four lectures and one 2-hour laboratory.
Prerequisite: One course in Botany and permission of the instructor.
The scope and importance of the fruit industry in Georgia and the United States with emphasis on the identification, classification, and adaptation of the principal kinds of nut crops, true fruits and small fruits.

303. The Principles of Vegetable Production. Four lectures and one 2-hour laboratory.
Prerequisite: One course in Botany and permission of the instructor.
The scope and importance of the vegetable industry in Georgia and the United States with emphasis on the identification, classification and adaptation of the principal kinds and varieties of vegetable crops.

315. Horticultural Physiology I.
Prerequisite: BOT 380, CHM 111–112 or 121–122.
A study of the principles of plant growth as they are applied to the production of horticultural crop plants. Emphasis is placed on water relations, nutrition, photoperiodism and growth regulators as they affect growth, flowering and fruiting.

323. Plant Protection Structures. 3 hours. Two lectures and one 2-hour laboratory.
Prerequisite: One course in Physics or Physical Science and permission of the instructor.
A study of the design and function of the various types of structures and covering materials used in production of plants with emphasis on durability, cost and efficiency in heating, cooling, and space utilization.

325. Horticultural Physiology II.
Prerequisite: BOT 380, CHM 111, 112 or 121, 122.
A study of the principles of plant growth as they are applied to the production of horticultural crop plants. Emphasis is placed on temperature, respiration, photosynthesis and pruning practices in growth, flowering, and fruiting.

362. Plant Propagation. Four lectures and one 2-hour laboratory.
Prerequisite: BIO 101, 102, or BOT 121, 122.
A study of the principles and practices underlying the increase in plant numbers with emphasis primarily on the anatomical and physiological basis for plant reproduction by various methods.

363ABC. Nursery Management I, II, III. Two hours each. One lecture and one 2-hour laboratory.
Prerequisite: Permission of the instructor.
A study of the basic fundamentals underlying the location, operation, and management of both retail and wholesale nursery establishments.

368. Management of Ornamentals. Four lectures and one 2-hour laboratory.
Prerequisite: One course in botany and permission of the instructor.
A study of the various operations, equipment, materials, and work programs necessary for the proper and efficient professional maintenance and management of ornamental plantings.

370AB. Ornamental Systematics I, II. 3 hours each. Two lectures and one 2-hour laboratory.
Prerequisite: Permission of the instructor.
A laboratory course concerned with the classification, nomenclature, and identification of annuals, perennials, and woody plants grown in nurseries, gardens, and other horticultural plantings. Emphasis is placed on identification, characteristics, requirements and usefulness.

391. Horticulture Internship.
An educational experience in the operations and management of horticultural industries or laboratories is provided through practical work experience.

402. Advanced Pomology. Four lectures and one 2-hour laboratory.
Prerequisite: HOR 301.
The physiological principles underlying the production of fruit and nut crops and small fruits with review of experimental evidence. Emphasis placed on varietal selections, site selection, and current cultural practices.

404. Advanced Olericulture. Four lectures and one 2-hour laboratory.
Prerequisite: BOT 323 and HOR 303.
Principles and perspectives of vegetable crop production with emphasis placed or current cultural practices and environmental influences.

405. Greenhouse Management I. Four lectures and one 2-hour laboratory.
Prerequisite: HOR 315, 325, and 323.
A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilization practices and the use of plant growth regulators. Students will be personally responsible for the culture of several crops of pot plants in the greenhouse.

406. Greenhouse Management II. *Four lectures and one 2-hour laboratory.*
Prerequisite: HOR 405.
A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and the use of growth regulators. Students

will be personally responsible for the culture of a floriculture crop in the greenhouse.

407, 408. Special Problems in Horticulture. 2–5 hours each.
Prerequisite: 10 hours in one of the horticultural concentrations in courses numbered 300 or higher.
For the advanced undergraduate students who wish to gain technical experience. Graduate students must schedule at least 5 hours a quarter and undertake a minor research problem.

421. Post-Harvest Physiology of Horticultural Crops. Four lectures and one 2-hour laboratory.
Prerequisite: Senior standing and consent of instructor.
Physiology of maturation and the effects of temperature, light, bruising and other factors on ripening. Also the relation of the above to harvesting, handling, preparation for market and storage of fruits, vegetables and flowers.

430. Plant Protection Laboratory. Two 2-hour laboratories.
Prerequisites: PAT 353 and ENT 374.
The application of pesticides for the control of insects, diseases, weeds, and other crop pests. Special attention is given to application equipment and principles.

PLANT GENETICS (GEN)

Head: Garrett. *Staff*: Hanlin, Hendrix, Hussey, Kozelnicky, Kuhn, Luttrell, McCarter, Papa, Powell, Roncadon, Wynn.

358. Principles of Genetics. Five lectures.
Prerequisite: BIO 101, 102, or BOT 121, 122.
Introduction to the principles of heredity and variation as related to all organisms.

401. Plant Genetics. Four lectures and one laboratory period.
Prerequisite: GEN 358.
Advanced genetic principles from coding to the genetics of sterility and disease resistance, cytoplasmic inheritance, polyploidy, apomixis, and mutations. (Offered Winter Quarter.)

402. Plant Breeding. Four lectures and one laboratory period.
Prerequisite: GEN 358.
Fundamental methods utilized in the science of plant breeding and the important role that breeding plays in crop and tree improvement. (Offered Spring Quarter.)

404. Physiological Genetics. Four lectures and one laboratory period.
Prerequisites: GEN 358, CHM 240 or BCH 301 or equivalent.
The biochemical basis of heredity, mechanisms of gene action, function and structure of the gene and mutations. (Offered Fall Quarter.)

415ABC. Plant Genetics Seminar. 1 hour each.
Discussion of selected topics in plant genetics and plant breeding.(Offered all quarters except summer.)

PLANT PATHOLOGY (PAT)

Head: Garrett. *Staff*: Hanlin, Hendrix, Hussey, Kozelnicky, Kuhn, Luttrell, McCarter, Papa, Powell, Roncadori, Wynn.

353. Elementary Plant Pathology. Four lectures and one 3-hour laboratory.
Prerequisite: BOT 121, 122 or BIO 101, 102.
An introduction to the study of disease in plants.

356. Crop Diseases. Three lectures and one 2-hour laboratory period.
Prerequisite: PAT 353.
Principles of disease diagnosis and control and their application in the production of field and horticultural crops. (Offered Fall Quarter.)

391. Plant Pathology Internship.
Prerequisite: Permission of department head, junior or senior standing.
Designed to give students an opportunity to gain practical experience in the application of plant pathological principles and procedures learned in formal classroom situations.

399. Special Problems. 2–5 hours.
Prerequisite: Appropriate basic courses.
Introduction to research or intensive study in special area of plant pathology, forest pathology, mycology, nematology, virology, bacteriology, or physiology.

415ABC. Plant Pathology Seminar. 1 hour each.
Discussion of selected topics in plant pathology. (Offered all quarters except summer.)

420. Introductory Mycology. Three lectures and two 2-hour laboratory periods.
Prerequisite: BIO 101, 102 or BOT 121, 122.
An introduction to the biology of the fungi, including a survey of all classes. (Offered Fall and Spring Quarters.)

423. Plant Virology. Three lectures and two 2-hour laboratory periods.
Prerequisite: BIO 101, 102 or BOT 121, 122.
The nature of plant viruses, their identification, host relations, transmission, purification, serology, and control. (Offered Spring Quarter of even years.)

425. Plant Nematology. Three lectures and two 2-hour laboratories.
Prerequisite: PAT 353 or 383.
Morphology and taxonomy of plant parasitic nematodes, with emphasis on characters used in identification. (Offered Winter Quarter.)

428. Diagnosis and Control of Plant Diseases. Three lectures and two 2-hour laboratories.
Prerequisite: PAT 353 or equivalent.
Development of fundamental and practical knowledge for identification and control of plant diseases. (Offered Fall Quarter.)

429. Bacterial Plant Pathogens. Three lectures and two 2-hour laboratories.
Prerequisite: MIB 350 or equivalent.
The plant pathogenic bacteria, their isolation, identification, inoculation, and control. (Offered Winter Quarter of odd years.)

430. Integrated Plant Pest Management. 3 hours.
Prerequisite: PAT 353, ENT 374, AGY 434 or permission of instructor.
Designed to integrate principles used in the control of various plant pests into a logical system of application. (Offered Spring Quarter.)

POULTRY SCIENCE (PS)

Head: McCartney. *Staff*: Britton, Fuller, Howarth, Huston, Jensen, Rahn, Reid, Washburn, Wyatt.

101. Introductory Poultry Science. 3 hours.
Two lectures and one laboratory period.
An introductory course designed to provide basic information in poultry science.

201ABC. Poultry Evaluation and Selection. 1 hour each.
A study of poultry and poultry product quality evaluation and selection standards.

360. Poultry Production. Three lectures and two laboratory periods.
Application of the principles of poultry science to the practice of poultry production. Offered fall quarter.

371. Commercial Poultry Management.
Prerequisite: PS 360.
A detailed study of the management practices and principles used in the business of producing eggs and poultry meat. Emphasis is placed on the factors influencing costs and returns in poultry operations. Offered spring quarter.

372. Poultry Breeding. Four lectures and one laboratory period.
Prerequisite: A course in genetics.
A consideration of the inheritance of morphological and physiological characters. Emphasis is placed on the development of criteria for selection and the development of genetically sound poultry breeding programs. Offered winter quarter.

373. (AM) Poultry Health. Five lectures.
Prerequisite: PS 360 and MIB 350. Offered to students majoring in poultry science and others that are qualified.
A study of common infections, parasitic and nutritional diseases of poultry; their causes, diagnosis, prevention, and control. Offered spring quarter, 1978.

375. Poultry Nutrition. Five lectures.
Prerequisite: PS 360 and AS 330.
The application of the principles of nutrition to the avian species. A study is made of the biochemical aspects of the individual nutrients and their supply in terms of feedstuffs and practical poultry diets. Offered winter quarter.

379. Poultry Seminar. 1 hour.
Prerequisite: PS 360.
Open to all students in related fields. Topical discussion of current problems and papers of scientific work in poultry to be presented by the students. Offered winter quarter.

380. Avian Anatomy and Physiology. Three lectures and two laboratory periods.
Prerequisite: BIO 101, 102, or equivalent.
A lecture and laboratory study of avian systemic anatomy in conjunction with the related physiological functions. Offered fall quarter.

386. (FS) Poultry Market Products Technology. Four lectures and one laboratory period.
Prerequisite: PS 360 or FS 200 or equivalent.
Methods of processing shell, fluid, and dried eggs, live and dressed poultry, and packaging and marketing of poultry products. Offered spring quarter.

391. Poultry Business Internship.
Prerequisite: Junior or senior status.
Offered to Poultry Science majors as part of the student's educational training. This course provides practical work experience and familiarizes the student with the operation and management of commercial poultry business firms.

393. Feed Manufacturing. 3 hours.
Prerequisite: PS 375 or AS 373 or DS 392.
A survey of the feed manufacturing industry; feed mill design, operation, finance, and organizations; utility, space, and labor requirements.

399. Special Problems in Poultry Science. 2–5 hours.
Prerequisite: Junior standing.

Introduction to research or intensive study in a specialized area of Poultry Science.

401. Avian Physiology. Three lectures and two laboratory periods.
Prerequisite: CHM 240.
A study of the physiology of circulation, respiration, digestion, metabolism, and the nervous system of the fowl with emphasis on the glands of internal secretion. Offered spring quarter.

405. Advanced Poultry Breeding. Five lectures.
Prerequisite: PS 372.
The development of practical poultry breeding programs. A study of the mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement. Offered spring quarter.

433. Basic Mycotoxicology. Five lectures.
Prerequisite: BIO 102 and CHM 261 or equivalent.
A study of mycotoxins as they related to agriculture. Various mycotoxins apt to occur in feedstuffs will be discussed. Major areas of emphasis are fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control. (Offered spring quarter.)

436. (AN) Ruminant Nutrition. Five lectures.
Prerequisite: AS 330, CHM 240, VPH 310 or consent of instructor.

437. (AN) Monogastric Nutrition. Five lectures.
Prerequisite: AS 330, CHM 240, VPH 310 or consent of instructor.

482. Avian Embryology. Three lectures and two laboratory periods.
Prerequisite: BIO 101, 102, or consent of instructor.
A basic course in embryology, tracing development from fertilization through the various stages of differentiation. Offered winter quarter.

560. Advanced Poultry Science and Practice.
Prerequisite: Permission of instructor.
An advanced course designed to provide current information on poultry genetics and physiology, nutrition, environment, market products technology, health and economics.

THE FRANKLIN COLLEGE OF ARTS AND SCIENCES

ANTHROPOLOGY (ANT)

Head: Bailey. *Staff*: Crawford, Graybill, Hally, Hudson, Hurlich, Olien, B. Smith, D. Smith, Ward. Majors in anthropology must have the following courses in addition to Anthropology 102 (or 111H/212H) unless specifically exempted by the department head: Sociology 105 (or 106H/206H), one course in social anthropology, one course in archaeology, one course in physical anthropology, one course in anthropological linguistics, and one course in a culture area.

All 400 and 500 courses have as a prerequisite Anthropology 102 or the consent of the instructor.

102. Introduction to Anthropology.
An introduction to the study of man as a cultural animal, the development of human societies from preliterate beginnings, the rise of complex social organizations with an outline study of the major cultures developed by man.

212H. Introduction to Anthropology (Honors).
See description of ANT 102. Not open to students who have credit for ANT 102.

Social Anthropology

400. Primitive Economics Systems.
The economic life of primitive peoples.

405. Cultural Anthropology.
Concepts and methods for analysis of the institutions of non-literate peoples and their comparison with modern societies.

410. Social Organization of Primitive Peoples.
A study of the social organization of primitive peoples. Concepts and methods for the analysis of social institutions of non-Western European societies.

412. Primitive Magic, Science, and Religion.
A critical historical survey of the various ways in which anthropologists have attempted to understand and explain exotic belief systems from the beginning of anthropology to the present day.

413. Comparative Belief Systems.
An examination of the structure properties of preliterate belief systems and the ideological consequences of literacy.

450. Methods in Social Anthropology.
An introduction to field methods used in social anthropology with emphasis on techniques used in the study of non-western cultures and comparisons with methods used in the study of contemporary American society.

452. History of Anthropological Theory.
A survey of the development of anthropological theory.

455. Ethnohistory.
An examination of the methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of the Southeastern U.S. will be emphasized.

515. Anthropology of Education.
Examination of the cultural aspects of educational processes and educational institutions in Western and non-Western societies.

Archaeology

420. Field Methods in Archaeology.
Methods of archaeological reconnaissance, survey excavation, laboratory preparation and analysis of collected materials.

422. Introduction to Archaeology.
The course will survey a broad range of archaeological goals, methods, techniques, and interpretations. Particular prehistoric cultural sequences or projects will be examined in depth. The interdisciplinary relationship of archaeology with other social, life, and earth sciences will be stressed. This course is prerequisite for advanced courses in archaeology.

423. Introduction to Research Methods.
The course will examine a variety of scientific, comparative, and analytical methods that are useful in archaeological and general anthropological research.

424. Laboratory Methods in Archaeology.
An introduction to the range of environmental, chronological, preservational, and analytical methods and techniques that are intrinsic to the accomplishment of archaeological research.

425. Old World Archaeology.
A survey of cultural developments in prehistory that range from the earliest evidence of man to the foundations of civilization.

426. New World Archaeology.
A survey of aboriginal cultural developments throughout the New World from the first arrival of man in the hemisphere during the late Pleistocene to the demise of native cultures under intensive European contact.

430. Archaeological Theory.
A consideration of major theoretical contributions in archaeology and prehistory with emphasis upon theory formulation, implementation, and revision.

431. Archaeology of Eastern North America.
A survey of prehistoric and early historic cultural developments in the North American Plains and Eastern Woodlands.

432. Archaeology of Western North America.
A survey of the archaeological evidence of man in North America west of the Great Plains from the time of early entry into the New World until times of European contacts.

435. African Prehistory.
The range of prehistoric cultural variability is examined as well as the goals, procedures, and problems of accomplishing prehistoric research in Africa.

436. The Paleolithic of Asia and Europe.
A survey of technological and cultural variability of man and his immediate ancestors through the Pleistocene epoch, with a focus on cultural-environmental adaptation.

Anthropological Linguistics

480. (LIN) Introduction to Linguistics.
An introduction to structural linguistics from the standpoint of anthropology, emphasizing elementary descriptive techniques and a consideration of the relationships among language, culture, and society.

481. (LIN) Linguistics: Phonology.
Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

482. (LIN) Linguistics: Morphology.
Grammatical analysis of phonemically transcribed data from numerous languages of the world.

483. (LIN) Types of Linguistic Structures.
A survey of linguistics structures as exemplified by selected languages of the world.

485. (LIN) American Indian Languages.
The native languages of North America: classification, grammatical structures, and genetic affiliations.

488. (LIN) Linguistics: Field Methods.
The technique of recording and analyzing a foreign language by working directly with a native speaker.

489. (LIN) Linguistics: Advanced Field Methods.
The technique of recording and analyzing a foreign language by working directly with a native speaker. Continuation of ANT 488.

Physical Anthropology

470. Principles of Physical Anthropology.
Methods and theory related to the study of mechanisms in human variation, adaptation, and evolution from a biological perspective.

471. Human Origins.
Prerequisite: BIO 101, 102 or equivalent.
A study of the evolutionary history of the human species through examination of the fossil record.

472. Osteology and Osteometrics I.
A comprehensive study of human skeletal anatomy and its relevance to taxonomic positioning of the genus *Homo* and related nonhuman primates. Topics include morphological variation, aging, sexing, paleopathology, paleodemography.

473. Osteology and Osteometrics II.
A survey of human gross and non-human primate anatomy stressing function and morphological change in evolution from the viewpoint of physical anthropology and primatology.

Culture Areas

310. Peoples of the World.
An introduction to the basic principles of ethnology, the historical and analytical study of

primitive cultures. A number of primitive cultures will be surveyed. These will be selected to give the fullest possible coverage in terms of area, race, and culture types.

402. The American Indian.
A survey course on the cultural development of the aboriginal population of the New World.

441. Indians of the Southeastern United States.
The study of the cultural and social characteristics of the indigenous peoples of the Southeastern United States from the time of earliest European contact to the present.

442. Afro-American Societies.
Comparative ethnology of New World Black populations; special attention is devoted to the cultural adaptations of Black populations to various colonial and republican powers, with emphasis on Latin America and the Caribbean.

443. Middle America: Peoples and Institutions.
Comparative ethnology of the Indians of Mexico and Central America from pre-Columbian times to the present.

444. Latin America: Peoples and Institutions.
The study of contemporary Latin American peoples and institutions in their community setting; special attention is devoted both to the original impact of Western civlization on the indigenous Indian communities of Central and South America, and to recent social changes incident to the introduction of modern agricultural and industrial technology.

445. Africa: Peoples and Institutions.
The study of peoples and institutions of Africa, south of Sahara, starting with earliest evidences of indigenous peoples; special emphasis will be placed on changes currently taking place.

446. South Asia: Peoples and Institutions.
Comparative ethnology of South Asia.

Other Courses

490. Special Topics in Anthropology.
5 to 15 hours.
A program of semi-independent study including reading and discussions of current developments in anthroplogy.

496H, 497H, 498H. Independent Reading and/or Projects (Honors). 5 hours each.

499H. Honors Thesis.

ART (ART)

Head: Ruzicka. *Staff*: Arnholm, Arntzen, Caruso, Clements, Coleman, Collier, Croker, Dezurko, deKooning, Dieball, Dodd, Donahue, Feldman, Hammond, Hanna, Harrington, Herbert, Howe, Huff, James, Johansen, Kaufman, Kehoe, Kent, Kleinsorge, Knecht, Lambert, McCutchen, McWillie, Marriott, Martin, Meyers, Millard, Morgan, Myers, Nasisse, Nicholson, Nix, Noffke, Olsen, Polk, Robertson, Rosenbaum, Sanderson, Sedgwick, Squires, Thompson, Walker, Williams.

Art Appreciation

213H. Art Appreciation and Experience.
An Honors course for non-art majors; a substitute for Art 300 or 317. The course will combine lectures, discussions and studio experiences, the latter feature differentiating the content of the course from conventional art appreciation offerings.

300. Appreciation of the Visual Arts.
(Credit is not allowed for both Art 300 and Art 213H, FA 300, or Art 317.)
An understanding of the arts built upon an exposure to the painting, sculpture, architecture and other arts of contemporary and historical times, illustrated lectures and reading will relate the sociological and psychological factors that influence the production of art and show the basic problems of design and technique as employed in classroom teaching strategies.

317. Art Appreciation. 3 hours. One lecture period every other day.
(Art portion of Fine Arts 300. Credit is not allowed for both Art 317 and Art 213H, 300, or FA 300.)
Nature and materials of the visual arts in their relation to man, with emphasis on the influence of art products in contemporary living and thinking. A field of study comprising painting, sculpture, architecture, graphic arts, arts of industry and commerce.

411. (PHY) Aesthetics

435. Art Criticism.
Prerequisite: Four courses in fine arts, two of which must be in the senior division.
The theory and practice of analyzing, interpreting and appraising works of art. The student will be required to demonstrate competence in critical analysis and explication.

Art Education

(See also College of Education, Art Education section, for requirements for Admission to Teacher Education Program)

305. Art and the Child. Five double laboratory periods.
The child, his development and needs in creative art experiences. Two and three dimensional laboratory experiences in drawing, painting, graphics, sculpture, and crafts appropriate in later use with children. Discussions, readings and field trips. (May not be used for credit by art education majors.)

523AB. Special Problems in Art Education. 5 hours each, maximum 10.
Five double laboratory periods each.
Prerequisite: Permission of instructor.
Specific problem areas, according to individual needs, are investigated, discussed and evaluated.

535. Philosophy of Art Education.
Prerequisite: Junior or senior standing, at least one course in education.
The course deals with the theoretical grounds for the conduct of art instruction as found in the thought of William Morris, John Dewey, Russell Lynes, Louis Kronenberger, Viktor Lowenfield, Thomas Munro, Moholy-Nagy, Lyman Bryson and others.

536. The Teaching of Art in the Secondary School. Five double laboratory periods.
Prerequisite: Two senior division courses in art.
For advanced students in art education and administration of secondary school programs. Recommended practices in qualitative curriculum planning, together with laboratory experiences that identify the unique problems in secondary school art, including philosophical, motivational and evaluative aspects.

537. Curriculum Development in Art Education.
Prerequisite: Two senior division courses in art or art education and permission of instructor.
The following major substantive issues in curriculum development in art education will be considered and analyzed; meaning and method of curriculum improvement; guidelines for curriculum improvement; curriculum decision making; testing and evaluating operational curriculum innovations, and focus on change.

539. Supervision of Art.
Prerequisite: Two senior division courses in art.
A seminar approach, dealing with the specific problems of the supervisor, consultant or director of the art program in the community schools, including qualitative curriculum planning and strategies for building the art potential of the classroom teachers.

540. The Teaching of Art in the Elementary School. Five double laboratory periods.
For advanced students in art education and administration of elementary school programs. Recommended practices in qualitative curriculum planning, together with laboratory experiences that identify the unique problem in elementary school art including philosophical, motivational and evaluative aspects.

541. History of Art Education.
Prerequisite: Two senior division courses in art or art education.
The development of art educational theory and practice in the institutional setting of American schools, beginning with the industrial arts and drawing instruction initiated in the Massachusetts schools in the 19th century; the theories of Arthur Wesley Dow, Walter Smith, Royal Bailey Farnum, Norman C. Meier, John Dewey, Viktor Lowenfeld, Thomas Munro and others, European figures such as Franz Cizek, Herbert Read, Walter Gropius and L. Moholy-Nagy will also be considered.

542. Docentship.
Prerequisite: Two senior division courses in art or art education.
Problems of museum art education; use of collection in painting, sculpture and the applied arts as material for instruction in school groups and the general public; the organization of curricular materials based on museum holdings; planning of exhibitions and exhibition programs. Students will be assigned practical problems in coordination with the Georgia Museum of Art.

543. Readings in Art Education.
Prerequisite: Senior division standing as art education major.
An inquiry into the dominant forces that have shaped and are influencing contemporary art education. Consideration will be given to the writings of Plato, Aristotle, Rousseau, Herbart, Pestalozzi, Froebel, Dewey, Bruner, and McLuhan.

Art History

Art history courses numbered 300 or above have prerequisite of Art 287 and 288 or permission of instructor.

211H. History of the Visual Arts as Related to Man.
An Honors course substitute for Art 287; an in-depth survey of world art from prehistoric through medieval times. The formal characteris-

tics of the painting, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing backgrounds. (Credit is not allowed for both Art 211H and Art 287.)

287. Introduction to the History of Ancient and Medieval Arts.
A survey of world art from prehistoric through medieval times. The formal characteristics of the paintings, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

288. Introduction to the History of Renaissance and Modern Art.
A survey of world art from the Renaissance to the present. The formal characteristic of the painting, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

450. Guided Foreign Study in Art History.
Prerequisite: Art 287 and 288 or comparable background and permission of instructor.
A systematic, on-the-spot study of a selected and logically unified group of art works found in foreign collections, sites, and museums. The range of study will be determined by the instructor and basically be within the field of the visual arts. Where possible, local library and archival resources will be used. Lecture and discussions before and during the period of travel will coordinate the activities and bring in factors of local environmental influence.

451. Guided Foreign Study in Art History.
Prerequisite: Art 287 and 288 or comparable background and permission of instructor.
A continuation of Art 450.

465. Renaissance Architecture.
A survey of the "new" architecture of the 15th and 16th centuries, emphasizing such bases of the style as general principles, revival of classical forms, and individual contributions. Italian works by such masters as Brunelleschi, Alberti, Bramante, Michelangelo and Palladio will be discussed.

466. Architecture and Decoration in Eighteenth Century France and England.
A study of the various styles of architecture and interior decoration in the two leading 18th-century centers. Discussion will revolve around changing concepts of form, expanding sources of inspiration, reaction against tradition, and theoretical re-evaluation of design. Topics to be considered are the rococo, neoclassicism, the Gothic and Greek revivals, and the Chinese vogue.

473. The Classical Tradition in the Visual Arts.
A discussion of classic examples of stylistic evolution. Topics vary from year to year: aspects of the development of classic and Gothic stone carving; classic and Renaissance drawing; Phidas, Raphael, and Poussin.

475. Greco-Roman Figurative Arts.
An introduction to the post-classical era, being a survey of sculpture and painting in antiquity after Alexander, and paying particular interest to developments in the first two centuries of the Roman empire.

476. History of Hellenic Art.
A survey of the major arts of Greece from the 8th to the 4th century B.C.

477. Roman Architectural Tradition.
A study of the architectural innovations of ancient Rome.

479. Monuments & Styles of Western Art.
The Geography of Art. After a preliminary review of historical styles, the course (lecture and discussion) compares such geographical traditions as North and South in European art; the psychology of European "countries" such as French, Netherlandish, Italian; the contrast of modern Europe and America; the perennial contrast of worldwide East and West.

480. Art of the Italian Renaissance.
A study of the major arts of the Renaissance Period with emphasis on painting and sculpture.

481. History of Northern Renaissance Art.
Historical study of the architecture, sculpture, painting, and minor arts north of the Alps from the waning of the medieval period to around the beginning of the 17th century. The artistic achievements in France, Germany, England, and the Low Countries will be presented against the background of their political, social and literary accomplishments.

482. Backgrounds of Modern Art, 19th Century.
A study of the historical and cultural roots of modern architecture, painting and sculpture as they are found in Europe during the 19th century. Particular attention is given to the relationship of the arts to their political, social, and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

483. Modern Art, 20th Century.
A study of the history of 20th century European architecture, painting, and sculpture. Particular

attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

485A. The Art of the Baroque in Italy, Spain and France.
An analysis, beginning with the 17th century in France, Italy and Spain, detailing the rise of the Baroque and its development.

485B. The Art of the Baroque in Holland, Belgium and England.
Intensive investigation of the art of northern Europe, concentrating on such major artists as Rubens, Rembrandt, Vermeer, and Van Dyck, while relating the art of the period to the political, philosophical and literary environment.

488. Art of Pre-Columbian America.
The art product of America from earliest times through the 15th century with emphasis given to the pre-Inca peoples of South America and the Maya, Zapotec, Toltec, Aztec and related peoples of Mexico and Central America.

489. Post-Columbian Latin American Art.
A study of the unique product resulting from the combination of Western culture with native arts in Latin America from the 15th century to the present.

490. Objectives of 20th Century Art.
A consideration of painting and sculpture today against its historical background, with the purpose of illustrating the links between characteristic contemporary expressions and the work of the past accepted as belonging to the central Western tradition. A reading seminar related to lectures.

493A. Early Christian and Byzantine Art.
An analysis of the origins and the rise of early Christian architecture and art in the Mediterranean countries and of the beginnings of Christian art in the north.

493B. Early Medieval Art.
A study of the architecture, painting and sculpture from the Carolingian to the Romanesque periods in the West and of the post-iconoclastic period in the East. Special emphasis will be given to Romanesque architectural and sculptural ensembles.

493C. Gothic Art.
A study of Gothic architecture and art beginning with developments of early Gothic architecture and sculpture in the 12th century and ending with the international Gothic of the late 14th century. Special emphasis will be given to the architecture and sculpture of the important French cathedrals.

498. Arts of the United States Before 1865.
Study of the arts of the area of the United States beginning with that of the American Indians and continuing with the architecture, sculpture, painting and minor arts from colonial times until 1865. Particular attention is given to the sources for these arts and their relationship to the physical and social situation.

499. Arts of the United States, 1865–Present.
Study of the arts of the United States from 1865 through the periods of industrialization and international political and economic leadership. Stress is given the evolving role of American cultural characteristics found in architecture, sculpture, painting and minor arts (particularly industrial design), their present-day manifestations and significance.

Basic Design and Drawing

120. Art Structure. Four double laboratory periods and one audio-visual lecture seminar.
Based on perceptual orientation in which students are made aware of and taught to respond to controlled visual stimuli. Slides, films, TV monitor, cameras and other contemporary devices are employed. Studio work revolves around a series of two-dimensional problems utilizing a variety of materials and appropriate techniques.

130. Art Structure. Five double laboratory periods including lectures.
Prerequisite: Art 120.
Continuation of the philosophy and intent of Art 120 with emphasis on the drawing experiences and skills required to produce three-dimensional images. Setups with the human figure, still lifes, and landscapes are employed to expand the attention and concerns of students. Studio work concentrates on flat surfaces and a wide range of media and techniques.

230. Art Structure. Five double laboratory periods including lectures.
Exploration in design in which a variety of color considerations are predominant. Two methods of approach are used: the traditional painterly involvement, and colorlight application used in color reproduction techniques.

240. Art Structure. Five double laboratory periods.
Problems with emphasis on the elements of visual organization in modular and sculptural approaches. Experiences in the manipulation of three-dimensional materials such as wood, paper, metal and synthetics.

Art studio courses numbered 300 or above have prerequisites of Art 120, 130, 230, and 240 or equivalent.

Crafts

260. Ceramics. Five double laboratory periods.
Form, proportion, and simple ornament as related to pottery shapes. Laboratory exercises and related lectures in hand-building pottery. Studio and lecture work in hand building of pottery; experience in glazing and firing.

350A. Fabric Design-Structure. Five double laboratory periods.
Fundamentals of woven and non-woven fabric structure. Study of the relationship between process and material.

350B. Fabric Design-Structure. Five double laboratory periods.
Prerequisite: Art 350A.
Woven structure investigated through manipulation of the hand loom. Study of the basic weaves and their application to hand-crafted and industrial textiles.

350C. Fabric Design-Structure. Five double laboratory periods.
Prerequisite: Art 350B.
Study of fibers and other materials as related to fabric structure and end use.

350D. Fabric Design-Structure. Five double laboratory periods.
Prerequisite: Art 350C.
Theory of woven structure including studio work on simple and multi-harness looms. Field trips and special problems.

351A. Fabric Design-Decoration. Five double laboratory periods.
Fundamentals of fabric decoration including work in flat pattern design and decoration techniques with dyes and pigments.

351B. Fabric Design-Decoration. Five double laboratory periods.
Prerequisite: Art 351A.
Screen process method of fabric printing, dye technology, stencil making and application processes.

351C. Fabric Design-Decoration. Five double laboratory periods.
Prerequisite: Art 351B.
Photographic and other commercial screen process printing techniques. Study of relationship of other decoration processes to screen printing. Field trips and special problems.

351D. Fabric Design-Decoration. Five double laboratory periods.
Prerequisite: Art 351C.
Exploration of non-printed fabric decoration techniques, dye technology and application processes.

352. Jewelry and Metalwork. Five double laboratory periods.
Fundamentals of working with such materials as sterling, gold, copper, and iron. Guidance in the techniques necessary for executing well-designed objects: forging, raising, casting, fabrication and finishing.

353ABCD. Jewelry. 5 hours each; maximum of twenty hours, taken in sequence. Five double laboratory periods.
Prerequisite: Art 352.
Extensive study of traditional and contemporary forms, materials and techniques. Investigation of ornamentation and adornment as it applies to jewelry. Experimentation with surface enrichment techniques.

354ABCD. Metalwork. 5 hours each; maximum of twenty hours, taken in sequence. Five double laboratory periods.
Prerequisite: Art 352.
Extensive study of forging and raising techniques involved in creating hollow ware, flat ware, and architectural ornaments. Experimentation with surface enrichment techniques.

361ABC. Ceramics. 5 hours each; maximum of 15 hours, taken in sequence. Five double laboratory periods.
Prerequisite: Art 260.
Studio experience, lectures, and outside study related to the designing and executing of forms in clay. Emphasis on the development of individual style by student through study of ceramics of past civilizations, ceramic technology, and concentrated studio work.

366ABC. Ceramics. Five hours credit each; maximum of 15 hours. Five double laboratory periods.
Prerequisite: Art 361C.
For advanced students who have sufficient background and technical knowledge in ceramics to carry on independent projects. Problems combining research in design and technology are selected in consultation with the instructor.

548. History of Fabric Art.
Study of the historical development of the fabric arts from the prehistoric period to the present.

549. Fabric Design. Five double laboratory periods.
Prerequisite: Art 350A.

Investigation of non-woven fabric structure as it relates to handcraft and industrial methods.

550AB. Fabric Design-Structure. Five hours each. Five double laboratory periods; maximum ten hours.
Prerequisite: Art 350D.
Problems in fabric structure for advanced students in fabric design who are able to carry on independent study. Research problems combining technology with design in consultation with the instructor.

551AB. Advanced Fabric Design. Five hours each. Five double laboratory periods; maximum ten hours.
Prerequisite: Art 351ABC, and D, and permission of instructor.
Problems in fabric design decoration for advanced students in fabric design who are able to carry on independent study. Research problems combining dye, fiber and application technology with design and function in consultation with the instructor.

553AB. Jewelry. Five hours each; maximum ten hours, taken in sequence. Five double laboratory periods.
Prerequisite: Two senior divison art courses and permission of instructor.
Problems in jewelry design and structure with emphasis on independent study. Exploration and experimentation in the nature of metals used, the peculiar techniques in forming, and the human requirements of jewelry.

554AB. Metalwork. Five hours each; maximum of ten hours, taken in sequence. Five double laboratory periods.
Prerequisite: Two senior division art courses and permission of instructor.
Problems in design, forming and constructing of various metals including copper, silver and gold. Independent study and emphasis on research is employed for solutions to design problems. The examination of the uniqueness of metal as a material is aimed in both functional and sculptural directions.

Drawing and Painting

321. Drawing I. Five double laboratory periods.
Prerequisite: Art 120, 130, 230, and 240.
Experience with model, still life, and landscape.

322. Drawing II. Five double laboratory periods.
Prerequisite: Art 321.
Research in the construction of the human figure. Nude and clothed model.

323A. Drawing III. Five double laboratory periods.
Prerequisite: Art 322.
Advanced level drawing. Emphasis on independent study. Special projects and experimental research encouraged.

323B. Drawing IV.
Prerequisite: Art 323A and consent of individual instructor and major professor.
Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

323C. Drawing V.
Prerequisite: Consent of individual instructor and major professor.
Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

331. Painting I. Five double laboratory periods.
Prerequisite: Art 321.
Introductory painting. Technical consideration of the preparation of grounds, supports, media and pigments. Emphasis on esthetic understanding derived from use of subject matter.

332. Painting II. Five double laboratory periods.
Prerequisite: Art 331.
Concentration on the human figure both nude and clothed.

333. Painting III. Five double laboratory periods.
Prerequisite: Art 332.
Advanced level painting. Emphasis on experimental and individual creativity.

334A. Painting IV. Five double laboratory periods.
Advanced level painting. Continuation of Art 333.

334B. Painting V.
Prerequisite: Art 334A and consent of individual instructor and major professor.
Available only as ádvanced independent study for drawing and painting majors. Studio meetings arranged.

334C. Painting VI.
Prerequisite: Art 334B or consent of instructor and major professor.
Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

341. Watercolor I. Five double laboratory periods.
Study of watercolor media.

342. Watercolor II. Five double laboratory periods.
Continuation of Art 341.

Graphic Design

306A. Lettering. Five double laboratory periods.
Principles of lettering and letter construction with experience in lettering as used and reproduced today. Study of typography in relation to lettering and design.

307A. Graphic Design I. Five double laboratory periods.
Fundamentals of layout using color, design, typography, and reproduction related to modern communication problems.

308A. Graphic Design II. Five double laboratory periods.
Prerequisite: Art 306A, 307A.
Application of drawing, painting, and design to the field of visual communication. Experimentation with various media and techniques as they apply to mass reproduction processes.

308B. Graphic Design III. Five double laboratory periods.
Prerequisite: Art 308A.
Advanced problems in graphic design related to the communication media and the use of photography in the preparation of layouts, comprehensives, and finished art.

308C. Graphic design IV. Five double laboratory periods.
Prerequisite: Art 308A.
Graphic techniques applied to architectural, environmental, and informational design.

309A. Advanced Lettering and Typography. Five double laboratory periods.
Prerequisite: Art 306A, 308A.
Creative manipulation of lettering, typography, plastic patterns and technical processes integrated toward functional communication.

310A. Art for Mechanical Reproduction. Five double laboratory periods.
Prerequisite: Art 308A.
Research in and experimentation with drawing, painting, and sundry visual media and techniques applicable to mass reproductions through the medium of photomechanical processes.

311. Three-Dimensional Graphic Design. Five double laboratory periods.
Prerequisite: Art 308A.
Comprehensive problems in graphic design applied to three-dimensional media. Emphasis will be placed on the development, structural and communicative processes as applied to environmental terms.

312. Special Problems in Graphic Design. Five double laboratory periods.
Prerequisite: Art 308BC, and one from Art 309, 310, or 311.
Advanced research into graphic design media and techniques and their application to a comprehensive visual communication project.

Interior Design

386A. Interior Design I.
Prerequisite: Permission of instructor.
An historical survey of architecture, concepts of interior space, the great periods of furniture design and allied crafts, as a background for comparison with contemporary architecture, furniture, new materials, methods of manufacture, and present-day needs.

386B. Interior Design II. Four double laboratory periods and two lecture periods.
Prerequisite: Permission of instructor.
Introduction to drafting principles and practices, including perspective; learning the symbolic language of structural design; measuring and scaling interior spaces and furnishings; residential space planning.

387A. Interior Design III. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386A, 386B.
Decorative materials and color as applied to interior design. Studio problems in color, light, paint, wall paper, soft floor coverings, woods and wood finishes, fabrics: design and construction; fabric uses and curtain design and construction.

387B. Interior Design IV. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386A, 386B, 387A.
Creative problems in cabinet and furniture design. The study of construction methods, sectional, isometric and oblique views; details, perspectives, and complete shop drawings.

387C. Interior Design V. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386A, 386B, 387A, 387B or consent of instructor.
Commercial lighting design, aesthetics of color and light controls; light sources, luminaries; influences on heating, ventilating and air conditioning; calculations; design theory; graphic symbols and professional design applications

388A. Interior Design VI. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386A, 386B, 387A, 387B, 387C or consent of instructor.
Architectural materials and construction as re-

lated to interior design. Wall and floor construction systems and materials; wood, stone, brick, concrete block, tile, flooring materials, graphics and lighting. A study of their use and design possibilities and presentations through drafting and perspective.

388B. Interior Design VII. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386AB, 387ABC or consent of instructor.
The examination and application of black and white and color delineation as applied to the professional presentation of interior space including elevations and perspectives. Emphasis on layout, composition and a variety of contemporary media.

391. Interior Design VIII. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386AB, 387ABC, 388AB.
Comprehensive senior design problems. Commercial, institutional, environmental space problems. Emphasis on total design concept for client presentation with plans, specifications, graphics, lighting design, material samples and perspective presentation.

392. Interior Design IX. Four double laboratory periods and two lecture periods.
Prerequisite: Art 386A, 386B, 387A, 387B, 387C, 388A and 388B.
Application of professional design procedures and ethical practices in interior design execution. Design problems, design sources and field trips to wholesale trade showrooms.

589. Interior Design. Five double laboratory periods.
Prerequisite: Art 389, 390 and 391.
An investigation into the problems of the planning of architectural spaces for public and residential uses. Research studies will be made into the disposition of space, type of historical or contemporary decorative treatments, types of equipment and furnishings, materials and color coordination. Problems and readings.

592. Procedures in Interior Design. Five double laboratory periods.
Prerequisite: Permission of instructor.
Procedures and ethical practices of interior design execution, designer-client relations, presentation of drawings, pricing, wholesale buying, trade showrooms and preparation of various types of contracts. Studies will be made of the qualitative aesthetic values as they relate to monetary values in the preparation of plans for various types of contract work.

Photographic Design

320ABC. Photographic Design I, II, III. Five hours credit each; maximum 15 credit hours, taken in sequence. Five double laboratory periods each.
Creative design through the use of photography. An investigation of the potential of the light sensitive medium.

335ABC. Photographic Design IV, V, VI. Five hours credit each; maximum 15 credit hours, taken in sequence. Five double laboratory periods each.
Prerequisite: Art 320C.
Problems in advanced photographic design including extensive studio and darkroom work.

525. History of Photographic Design.
Prerequisite: Art 320A.
A survey of the historic images and design influences of photography as they relate to the important personalities and techniques of this discipline.

Printmaking

324A. Printmaking: Screen Printing I. Five double laboratory periods.
An introductory examination of various printmaking techniques with concentrated work in screen printing.

324B. Printmaking: Screen Printing II. Five double laboratory periods.
Individual screen printing projects stressing esthetic development on the advanced level.

325A. Printmaking: Intaglio I. Five double laboratory periods.
An introductory examination of various printmaking techniques with concentrated work in intaglio.

325B. Printmaking: Intaglio II. Five double laboratory periods.
Individual projects in the intaglio process stressing esthetic development on the advanced level.

326A. Printmaking: Lithography I. Five double laboratory periods.
An introductory examination of various printmaking techniques with concentrated work in lithography.

326B. Printmaking: Lithography II. Five double laboratory periods.
Individual projects in lithography stressing esthetic development on the advanced level.

327A. Printmaking: Relief Processes I. Five double laboratory periods.
An introductory examination of relief printmaking techniques with concentrated work in the processes of wood cut, wood engraving, linoleum cut.

Sculpture

370. Sculpture. Five double laboratory periods.
A beginning course in sculpture. Basic forms are explored through a series of problems employing carving, modeling and constructive methods.

371. Sculpture. Five double laboratory periods.
Portrait and figure study in sculpture composition.

372ABC. Sculpture-Materials I, II, III. 5 hours each.
Five double laboratory periods.
Prerequisite: Art 370 or 371.
The A course covers beginning welding techniques and the use of metal in sculpture composition. The B course continues with wood and stone carving, and the C course works with cement and plastic casting and plaster and clay modeling.

373ABC. Sculpture-Casting I, II, III. 5 hours each.
Five double laboratory periods.
Prerequisite: Art 370 or 371.
Introduction to methods of producing metal sculpture. The production of sculpture in refractory molds and sand casting will constitute the major emphasis of this course.

Technical Problems

301. Technical Problems. Five laboratory periods.
A special course for students qualified to carry out individual projects in studio areas. Work is done independently of the regularly scheduled classes. Scheduling of this course must be approved by the head of the Department of Art.

302. Technical Problems. Five laboratory periods.
Continuation of Art 301.

Honors Problems

496H, 497H, 498H. Independent Reading and/or Projects.
5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

BIOCHEMISTRY (BCH)

Head: Peck, *Staff*: Black, Brewer, Carlton, Champney, Cole, Cormier, DeSa, DerVartanian, Dure, Eck, Finnerty, Foster, Inman, Key, Kushner, Lansman, Lee, Ljungdahl, Lovins, McRorie, Mendicino, Patel, Peifer, Przybyla, Rawson, Sansing, Srivastava, Travis, Wampler, Williams.

Biochemistry majors in the College of Arts and Sciences should take the following courses: BCH 310, 401, 402, and 403, plus other courses in mathematics, physics, organic chemistry, physical chemistry, and biology, as determined in consultation with the departmental adviser.

310 (BIO) Introductory Biochemistry. Five lectures.
Prerequisite: Chemistry 261 or equivalent.
An introduction to the chemistry of biologically important molecules and their metabolism.

399. Independent Study. One to five hours per quarter; maximum of 15 hours.
Prerequisite: Biochemistry 310 and approval of department head.
This course affords the advanced student the opportunity to conduct independent study and research under the direction of individual staff members.

401. Intermediate Biochemistry. Five lectures.
Prerequisite: Biochemistry 310.
An intermediate-level course in general biochemistry which stresses the physical and chemical properties of biological molecules.

402. Intermediate Biochemistry.
Prerequisite: Biochemistry 401.
An intermediate-level course in general biochemistry which stresses intermediary metabolism.

403. Laboratory Techniques in Biochemistry. One lecture and four 3-hour laboratory periods.
Prerequisite: Biochemistry 310.
A course designed to acquaint the student with basic techniques in biochemistry to include enzyme assay and purification, nucleic acid purification and characterization, chromatography,

spectrophotometry, and other modern techniques.

405, 406. Introductory Physical Biochemistry. Three lectures or recitations, three hours each. Prerequisite or corequisite: CHM 491A (BCH 405) and CHM 491B (BCH406).
This course applies the principles of physical chemistry to problems in biochemistry. Topics include bioenergetics, thermodynamics, and equilibria (405) and kinetics, surface chemistry and membranes, and electrochemistry (406).

435. (BIO/PCS) Molecular Biophysics.
Prerequisite: Physics 229 or 239, Biology 102, and mathematics 256 and/or consent of instructor.
A selection of various topics of current interest in biophysics to include molecular spectroscopy and photobiology, properties of macromolecules, analysis of electrical activity of nerves and muscles, introduction to theoretical biology, mathematical modeling of biological systems, membranes and genetics.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for Honors students to undertake individual research in the field of their majors or in a closely related field.

DIVISION OF BIOLOGICAL SCIENCES

Chairman: Key
(See also Biochemistry, Botany, Entomology, Microbiology, Psychology and Zoology.) Biology majors in the College of Arts and Sciences should take the following courses: Biology 101, 102 (it is anticipated that the proposed Biology 111, 112 will be implemented in 1977; if so these courses would be taken instead of Biology 101, 102 as the normal prerequisite to upper division biology courses). Biology 310, 320; 330 or 340; 350 or 360 and one course from among Biology 321, 331, 351 or Biochemistry 403 plus other courses in biology, chemistry, mathematics and physics as determined in consultation with a biology degree advisor.

101. Principles of Biology. Four lectures and one 3-hour laboratory.
Cell structure, genetics, chemistry, development and evolution of prokaryotic and eukaryotic organisms.

102. Principles of Biology. Four lectures and one 3-hour laboratory.
Prerequisite: Biology 101.
Phylogeny and evolution of animals and plants, animal and plant development, bioenergetics, structure and function of major plant and animal systems, photosynthesis, behavior, and ecology.

105. Biology for Elementary Teachers, an Ecological Approach. Three lectures and two double laboratory periods.
Materials and methods currently used in the biological area of elementary science teaching are integrated into a study of the fundamental concepts of biology with primary emphasis on the organism in its environment. Restricted to students majoring in elementary education.

106. Biology for Elementary Teachers, a Cultural Approach. Three lectures and two double laboratory periods.
(This course is independent of Biology 105.)
An introduction to the unifying concepts and information of the biological sciences taught with materials appropriate to elementary school teaching. Emphasis is placed upon the significance of biology in terms of its social and cultural implications, including the impact of biology on human behavior, nutrition, drug use, health and medicine, population problems, eugenics, exploitation of the environment, and decision making. Restricted to students majoring in elementary education.

200. Biological Topics of Social Significance.
Prerequisite: Sophomore standing.
A survey of contemporary problems concerning man as a biological individual in man's interaction with the environment.

310 (BCH) Introductory Biochemistry.
Prerequisite: Chemistry 240 or equivalent.
A survey of the chemistry, isolation, physical properties, structures and important reactions of biological molecules. Energetics, enzymology, metabolic pathways plus carbon and nitrogen utilization. In-depth "minicourses" consider topics of special interest during the last portion of the course.

320. Genetics.
Prerequisite: Biology 101, 102; organic chemistry; BIO 310 (biochemistry) is strongly recommended.
An integrated and comprehensive treatment which deals with genetic mechanisms in viruses,

bacteria and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative and population aspects.

321. Experimental Genetics.
Prerequisite: Biology 320; or taken concurrently.
A laboratory course in genetics utilizing *Drosophila*, bacteria, phage and fungal systems for the analysis of mutation, transfer systems, mapping, complementation, population studies, and other genetic principles.

330. Developmental Biology.
Prerequisite: Biology 101, 102; organic chemistry; (BIO 310 and/or 320 are recommended.)
Cell differentiation and morphogenesis of animals, plants and prokaryotes. Topics include: gene regulation at the molecular level, gametogenesis, fertilization, normal embryonic development, cell and tissue interactions, hormonal regulation, and the developmental aspects of cancer and the immune response.

331. Laboratory in Cellular and Developmental Biology.
Prerequisite: Biology 101, 102 and 330 or 340, and Chemistry 240.
A laboratory course on the basic techniques for investigating properties of cells and differentiating sqstems. Experiments will be performed on the isolation and characterization of cell components, on induction of enzymes, and on developing embryos. Demonstrations of important techniques such as analytical ultracentrifugation, autoradiography and electron microscopy will be included.

340. Cell Biology.
Prerequisite: Biology 101, 102 and 310.
An integrated approach to the structure and function of cells. Topics include: cell architecture, the cell cycle nucleic acid and protein syntheses, membrane phenomena, organellogenesis, energy transductions and cellular control mechanisms.

350. Ecology.
Prerequisite: Biology 101, 102.
A first course in the science of biotic populations and communities. The course covers population structure and dynamics, organization and classification of communities, nutrient and energy flows in ecosystems, and the principles of systems ecology.

351. Ecology Laboratory.
Prerequisite: Biology 350 or permission of the instructor.
A laboratory course designed to illustrate the principles developed in Biology 350. Particular emphasis will be placed on structure, function and control mechanisms at the community ecosystem level of organization.

360. Evolutionary Biology.
Prerequisite: Biology 101, 102.
An introduction to the processes of evolution. Topics include: population genetics, speciation, systematics, coevolution, chemical orgin of life, history of life, geological record, and evolution of man.

370. Animal Behavior.
Prerequisite: Biology 102 or Psychology 101.
An evolutionary approach to the principles of animal behavior, emphasizing social organization, animal communication, and the genetic, developmental and physiological bases of behavior.

380. Neurobiology.
Prerequisite: Biology 102 or Psychology 101
An introduction to the structural organization and basic physiology of the nervous system. Emphasis is placed on the mechanisms of neural integration required to describe the model systems of motivation, locomotion, perception, and learning. The social and philosophical implications of mind-brain research are discussed.

390. Readings in Biology. One to Five hours.
Prerequisite: Consent of instructor.
Small student groups will meet weekly with a faculty member to discuss readings in selected areas of biology. Much of the reading is from scientific journals. A list of topics and instructors is available in the division office before preregistration each term. Contact the individual instructor before registering.

399. Georgia Intern Program. 5–15 hours.
Prerequisite: Upper division standing, consent of adviser.
Participation in the activities of a state, county or municipal agency or government office under the direction of a faculty member. The project shall be related to at least one of the academic disciplines of the Division.

496H, 497H, 498H. Independent Reading and/or Projects
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

BOTANY (BOT)

Head: Black. *Staff*: Barstow, Clegg, Darley, Duncan, Dunn, Fisher, Franz, Fuller, Hanlin, Hicks, James, Jaworski, Jones, Key, Kochert, Luttrell, Meagher, Michel, Monk, Plummer, Porter, Rawson, Sharitz, Walker.
A botany major in either the College of Arts and Sciences or the College of Agriculture is required to take the following courses: Biology 101, 102; or Botany 121, 122; Biology 310, 320, 330 or 340, 350 or 360; Botany 410 or Plant Pathology 420, Botany 323 or 431 and Botany 483. Math 254, Chemistry 121, 122, 240, Physics 127, 128 are also required. Additional recommended courses in botany depend on the students specific interests. Consult the departmental undergraduate advisor for further information.

121. Elementary Botany. Four 1-hour lecture periods and one 3-hour laboratory period. Not recommended for those with credit for Biology 101–102.
A study of the biology of plants including cell structure and function, plant structure, growth and function and basic ecology.

122. Elementary Botany. Four 1-hour lecture periods and one 3-hour laboratory period.
Prerequisite: Botany 121.
A study of (a) heredity, variation, and evolution of seed plants; (b) representative members of each of the major plant groups; and (c) the relations of plants to their environment.

203. Principles of Botany. Four 1-hour lecture periods and one 2-hour laboratory period.
Prerequisite: Biology 101–102.
Extension and supplementation of botanical principles introduced in Biology 101–102. General background and preparation for senior division courses in botany and allied fields. Not open to students with credit for Botany 121 or 122.

205. Identification of Native Plants. Four 2-hour periods and weekend field trips.
Identification of wild flowers, ferns, trees, and shrubs. Credit is not allowed for Botany majors. Offered Spring Quarter.

223H. Elementary Honors Botany.
Combined lecture, laboratory, and discussion periods emphasizing the study of principles relating to plants in our past, present, and future.

323. Elementary Plant Anatomy. Three 1-hour lecture periods and two 2-hour laboratory periods.
Prerequisite: Biology 101–102 or Botany 121–121.
The origin and development of the organs and tissue systems of vascular plants, and comparative study of the structure of roots, stems, leaves, flowers, and fruits.

375. Plant Ecology. Three 1-hour lecture-discussion periods, one 3-hour field trip or laboratory per week, and two weekend field trips.
Prerequisite: Biology 101–102 or Botany 121–122.
Ecology of plants as components of systems at the individual, population and ecosystem levels from the perspective of field and applied problems of system structure and function.

380. Elementary Plant Physiology. Three 1-hour lectures and two double laboratory periods.
Prerequisite: Biology 101–102 or Botany 121–122.
A survey of physiological processes occuring in plants and conditions which affect these processes.

390ABC. Special Problems in Botany. 1–5 hours each, maximum 15.
Prerequisite: Two senior division courses in botany, permission of undergraduate advisor and department head.
Independent research and research participation in selected problems.

410. Biology of the Algae I. Three lectures and two 2-hour laboratory periods.
Prerequisite: Biology 101–102 or Botany 121–122.
Algal phylogeny, taxonomy, cytology, reproduction, and ecological relationships. Emphasis on the organismal biology of algae. Laboratories will concentrate on examination of living materials and will include methods for the isolation and culture of algae.

412. Palynology. Three lectures and two laboratory periods.
Prerequisite: Geology 126, Botany 122, or approval of instructor.
The application of pollen and spore analysis to geological, botanical, ecological, aerobiological, archaeological studies with practical experience in extraction, identification and interpretation of pollen and spore diagrams.

413. Paleobotany. Three lectures and two laboratory periods.
Prerequisite: Geology 126, Botany 122 or approval of instructor.
Phylogeny and taxonomy of fossil plants with emphasis on their use in stratigraphic, paleoclimatic and paleoecological studies.

431. Morphology of Vascular Plants. Three 1-hour lectures and two 2-hour laboratory periods.
Prerequisites: Biology 101–102 or Botany 121–122.
A survey of the organographic diversity in vascular plants including principles of structural organization and major evolutionary trends. Course is strongly laboratory oriented with emphasis on first-hand examination of living material.

440. Cytology. Two lectures and three double laboratory periods.
Prerequisites: Permission of instructor.
The study of cells, their cytoplasm and nuclei, metabolism, growth, differentiation, and reproduction.

465. Plant Taxonomy. Five hours. Three 1-hour lectures and two 2-hour laboratory periods. Weekend field trips.
Prerequisites: BIO 101–102 or BOT 121–122. Credit not allowed for both 205 and 465/665.
History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies.

471. Principles of Plant Systematics. Three 1-hour lectures and two 2-hour laboratory periods. Weekend field trips.
Prerequisite: Biology 101–102 or Botany 121–122.
Principles of systematics, principles of nomenclature, concepts of rank and taxa, characterization and description, problem design, analytical procedures, data presentation, identification of special groups, classification, phylogenetic relationships, polymorphism, literature and bibliographic aids. Labs: Morphology and arrangement of selected phylogenetically significant families; preparation of a revision of small genus or species complex.

472. Variation and Evolution in Plants. Three 1-hour lectures and two 2-hour laboratory periods.
Prerequisite: Biology 101–102 or Botany 121–122, a course in genetics or cytology would be useful but not required.
Processes and mechanisms of variation and evolution, genotypic and phenotypic patterns, chemosystematics, adaptation, breeding systems, polyploidy, hybridization, apomixis, polymorphisms, use of evolutionary data taxonomically, literature, experimental design, population sampling.
Variation analysis breeding techniques, data presentation, population analysis, cytotaxonomic techniques, scanning electron microscope.

473. Taxonomy of Grasses, Sedges, and Rushes. Two 1-hour lectures and three 2-hour laboratory periods. Weekend field trips.
Prerequisites: Botany 465 or permission of instructor.
Identification of grasses, sedges and rushes, systematics and economic importance of grasses, recognition of the economically important grasses of the Southeast. Labs: Morphology, identification, a collection will be required.

475. Plant Population Ecology. Three lectures and two to six hours library-laboratory sessions per week.
Prerequisites: BIO 350, BOT 375, or permission of instructor.
Life histories: variability along environmental gradients, genecological characteristics, occurrences; germination, growth, reproduction; importance ecologically, economically, and in evolution.

476. Vegetation of North America. Five hours. Six hours library-laboratory, three hours seminar per week and a weekend field trip.
Prerequisite: 15 hours credit in botany, geology, and geography, or agriculture including a course in ecology. Theories of plant geography, climax formations, and the causes of contemporary vegetation. Includes floristics, indicator plants and problems in land utilization. Emphasizes eastern North America.

477. Community Ecology. Three lectures and two laboratory periods.
Prerequisites: BIO 350 or permission of instructor.
The study of community structure, classification, distribution and development.

483. Plant Physiology. Three lectures and one triple laboratory period.
Prerequisite: Biology 310 or equivalent.
Plant Physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development.

496H, 497H, 498H. Independent Study and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors

student to undertake individual research in the field of his major or in a closely related field.

520. Local Flora for Teachers. Four 2-hour periods and weekend field trips.
Identification of vascular plants: native and naturalized wild flowers, ferns, trees, and shrubs. Credit will not be given to Botany majors.

522. Plant Ecology for Teachers. Three 1-hour lecture discussion periods, one 3-hour field trip or lab per week and two weekend field trips.
Prerequisites: Graduate standing in Science Education. Comprehensive coverage of plant ecology at the individual, populations and ecosystem levels with emphasis on experimental and field approaches.

558. Plant Microtechnique. Two one-hour lecture discussion periods, three two-hour labs per week.
The theory and practice of plant tissue fixation, dehydration, embedment, sectioning and staining. Several special techniques will also be covered, including modern histochemical localization procedures, microautoradiography, and the applications of various types of light microscope optics.

CHEMISTRY (CHM)

Acting Head: R. Hill. *Staff*: Allinger, Baldwin, Bobbio, Boyd, Carr, Carreira, Cole, Coleman, Cox, Gailey, Garst, Handler, Hautala, Heric, Johnston, A. King, R. King, Kutal, Lane, Melton, Nelson, Newton, Pelletier, Pinnick, Rogers, Ruff, Smith, Stammer, Waggoner, Whitten.

Majors in chemistry must meet these minimum requirements: Chm. 340/340L, 341/341L, 390, 391, and one additional senior division chemistry course of at least four hours credit.

The recommended sequence of chemistry courses taken by chemistry majors is Chm. 121, 122, 123, 280 (or 127, 128, 129), 340, 341, 390, 391.

105. Introductory Chemistry. Two hours.
Prerequisite: Open only to students in elementary education. Corequisite: CHM 105L.
Basic concepts of chemistry for elementary school teachers.

105L. Introductory Chemistry Laboratory. Three hours
Corequisite: Chemistry 105.

111, 112. Elementary Chemistry. Four hours each.
Corequisite: Chemistry 111L, 112L.
A non-mathematical study of chemical principles. Not open to students with credit in chemistry. Cannot be used toward any B.S. degree requirements in Arts and Sciences.

111L, 112L. Elementary Chemistry Laboratory. One hour each.
Corequisite: Chemistry 111, 112, respectively.

121, 122. General Chemistry. Four hours each.
Prerequisite or corequisite for Chemistry 121: Mathematics 101 or equivalent. Corequisite: 121L, 122L. The first course is a systematic treatment of fundamental chemical principles. The second course is a continuation of the first.

121L, 122L. General Chemistry Laboratory. One hour each.
Corequisite: CHM 121, 122, respectively.

123. Qualitative Inorganic Analysis. Three hours.
Prerequisite: Chemistry 121, 122. Corequisite: 123L.
The fundamental theories of qualitative analysis and analysis of common cations and anions by semi-micro methods.

123L. Qualitative Analysis Laboratory. Two hours.
Corequisite: Chemistry 123.

127, 128, 129. Advanced General Chemistry. Four, four, and three hours, respectively.
Prerequisite: Admission based upon results of placement tests in chemistry and mathematics. Corequisite: CHM 127L, 128L, 129L.
A rigorous, in-depth study of chemical principles designed for the well-prepared student. Not open to students with credit in general chemistry.

127L, 128L, 129L. Advanced General Chemistry Laboratory. One, one, and two hours, respectively.
Corequisite: Chemistry 127, 128, 129, respectively.

127H, 128H, 129H. Advanced General Chemistry (Honors.) Four, four, and three hours, respectively.
Prerequisite: Admission based upon results of placement tests in chemistry and mathematics. See description for Chemistry 127, 128, 129. Not open to students with credit in general chemistry. Registration through the Programs for Superior Students office.

240, 241. Fundamental Organic Chemistry. Four hours each.
Prequisite: Chemistry 122 or 128.

A two-quarter sequence designed to teach students the basics of organic chemistry in preparation for entrance into veterinary medicine and pharmacy schools or for majors in bioscience fields. Credit cannot be used toward a major in chemistry.

240L, 241L. Fundamental Organic Chemistry Laboratory. One hour each.
Prerequisite or corequisite: Chemistry 240 and 241, respectively.

261. Elementary Organic Chemistry. Four hours.
Prerequisite: Two quarters of college chemistry, numbered 111 or above.
A brief introduction to organic chemistry with material of special interest to students of agriculture, home economics, and forest resources. Not open to students with credit in organic chemistry.

261L. Elementary Organic Chemistry Laboratory. One hour.
Prerequisite or corequisite: Chemistry 261.

280. Quantitative Analysis. Three hours.
Prerequisites: Chemistry 123, 123L. Corequisite: 280L.
The fundamental principles of quantitative analysis using gravimetric, volumetric, and spectrophotometric measurements.

280L. Quantitative Analysis Laboratory. Two hours.
Prerequisite or corequisite: Chemistry 280.

340, 341, 342. Modern Organic Chemistry. Four, three and four hours, respectively.
Prerequisites: Chemistry 121, 122 or 127, 128.
A three-quarter sequence designed for chemistry majors and students preparing for medical and dental schools. The course content of Chemistry 240 and 241 does not parallel that of Chemistry 340 and 341 and consequently Chemistry 240 is not an acceptable prerequisite for Chemistry 341.

340L, 341L, 342L. Modern Organic Chemistry Laboratory. One, two and one hours, respectively.
Prerequisites or corequisites: Chemistry 340, 341, 342, respectively.

347, 348, 349. Introduction to Research (Field to be inserted). Five, five, one–five hours, respectively.
Prequisite: Chemistry 381 or 427 or 491C or consent of department head.

369. Industrial Chemistry.
Prerequisite: Chemistry 241 or 341.
Introduction to inorganic and organic chemical industrial practices and processes.

381. Advanced Analytical Chemistry. Three hours.
Prerequisites: Chemistry 129 or 280, 340; Corequisite: Chemistry 341.
Separation methods including gas chromatography, quantitative spectrometric instrumentation and methods, and the interpretation of spectra.

381L. Advanced Analytical Laboratory. Two hours.
Prerequisite or corequisite: Chemistry 381.

382. Clinical Chemistry. Three hours.
Prerequisites: Chm. 280/280L or 129/129L, Bio or Bch 310 and consent of instructor. Three lectures and/or discussion periods.
An introduction to the principles of chemistry as applied to the modern clinical laboratory with emphasis on automated separation, analyses and data collection.

382L. Clinical Chemistry Laboratory. Two or three hours. Two or three laboratory periods.
Corequisite: Chm. 382.
An introduction to the experimental methods of current use in clinical chemistry.

390, 391. Fundamentals of Physical Chemistry. Three hours each.
Prerequisites: Chemistry 280 or 129 and 341, Physics 229 or 239, Mathematics 254.
A two-quarter course in the basic concepts and techniques of physical chemistry. Designed for pre-medical and non-professional chemistry majors.

395. Physical Chemistry for Biologists.
Prerequisites: Chemistry 341, Physics 128, Mathematics 253.
A condensed, one-quarter course stressing the topics of physical chemistry of most importance for students in the biological sciences. This course cannot be used as credit toward a chemistry major.

400. History of Chemistry.
Prerequisite: 25 hours of chemistry or consent of department head.

401. Advanced Chemistry for Teachers. Four hours.
Prerequisite: 30 hours of chemistry or consent of instructor.
Special topics in chemistry of interest to the high school science and chemistry teacher. Open only to students in education.

401L. Advanced Chemistry for Teachers Laboratory. 1 hour.
Prerequisite or corequisite: Chemistry 401.

402L. Experimental Inorganic Chemistry. Two hours.
Prerequisite or corequisite: Chemistry 426.
A laboratory course involving the synthesis and characterization of typical inorganic compounds by modern techniques.

405. The Literature of Chemistry. Two hours.
Prerequisite: 15 hours of chemistry or consent of department head.
An introduction to the literature of chemistry, research procedures, and directions which can be found only in original sources.

417. Principles of Molecular Spectroscopy. Three to 12 hours (three hours per quarter).
Prerequisite: Chemistry 491C or equivalent.
The general theory of specific areas of spectroscopy such as ultraviolet, infrared, NMR, ERS, or mass spectrometry.

418. Methods of Molecular Spectroscopy. Two to eight hours. (Two hours per quarter).
Prerequisite: Chemistry 491C or equivalent.
Complements Chemistry 417 by studying the instrumentation and operation of specific instruments.

421. Advanced Inorganic Chemistry.
Prerequisites: Chemistry 123 and one other chemistry course with laboratory.
A comprehensive study of inorganic chemistry based upon the periodic arrangement of the elements.

426, 427. Intermediate Inorganic Chemistry. Three hours each.
Prerequisite: Chemistry 491C or equivalent.
A two-quarter sequence designed as an introduction to modern theories of bonding and structure, reaction mechanisms and synthetic methods in inorganic systems.

430, 431, 432. Intermediate Organic Chemistry. Three hours each.
Prerequisites: Chemistry 441 or 491C or equivalent or consent of department head.
A three-quarter sequence designed to increase the student's understanding of structure, mechanisms and synthesis as applied to organic compounds and reactions.

441. Organic Qualitative Analysis. Two hours.
Prerequisite: Chemistry 342. Corequisite: Chemistry 441L.
An application of organic chemistry to the solution of structural problems, including both chemical and spectroscopic methods.

441L. Organic Qualitative Analysis Laboratory. Three hours.
Corequisite: Chemistry 441.

144. Heterocycle Chemistry. Three hours.
Prerequisite or corequisite: Chemistry 342.
A study of the structures, spectra, reactions and syntheses of heterocyclic compounds.

449. Introduction to Polymer Chemistry. Three hours.
Prerequisite: Chemistry 241 or 341.
The physical and chemical properties of polymers as related to their structures.

491ABC. Physical Chemistry. Four hours each.
Prerequisites: Chemistry 129 or 280, 341, Physics 229 or 239, Mathematics 255.
A three-quarter sequence in the fundamental principles of physical chemistry. Kinetic molecular theory, thermodynamics, equilibria, electrochemistry, reaction kinetics, quantum mechanics and molecular spectroscopy. Intended for students who will enter chemistry as a profession or will do advanced study in chemistry.

492. Chemical Thermodynamics. Three hours.
Prerequisite: Chemistry 491C or equivalent.
Classical and statistical thermodynamics as applied to chemical reactions, phase equilibria, and solutions.

493. Quantum Chemistry. Three hours.
Prerequisite: Chemistry 491C or equivalent.
Introduction to basic principles of quantum mechanics and applications to model systems. Approximation methods, chemical bonding and spectroscopy.

494. Chemical Kinetics. Three hours.
Prerequisite: Chemistry 491C or equivalent.
Mechanisms and energetics of chemical reactions in the gas phase and in solution. Heterogeneous reactions, collision and transition state theories and relaxation methods.

495. Radiochemistry. Three hours.
Prerequisite: Chemistry 491B or 391.
Principles of radioactivity and the measurement of ionizing radiation. Applications to chemical problems. Lectures and laboratory exercises.

496A. Experimental Physical Chemistry. One hour.
Prerequisite or corequisite: Chemistry 390–391 or 491ABC.
Treatment of experimental data, errors, graphical procedures and mathematical techniques.

496BC. Experimental Physical Chemistry. Two hours each.
Prerequisite or corequisite: Chemistry 391 or 491BC. Laboratory experiments in selected areas of physical chemistry. Thermochemistry, colligative properties, electrochemistry, reaction kinetics and spectroscopy.

496H, 497H, 498H. Independent Study and/or Projects. Five hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

497. Introductory Statistical Thermodynamics. Three hours.
Prerequisite: Chemistry 491C.
A study of the thermodynamic properties of macroscopic systems in terms of molecular properties. Boltzmann, Bose-Einstein and Fermi-Dirac distributions and their application to chemical and physical systems.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

503. Chemistry for the Elementary School Teacher. Four hours.
Prerequisite: Experience as an elementary school teacher.
Basic topics in chemistry specifically selected for application at the elementary school level. Open only to advanced students in elementary education without previous training in chemistry.

503L. Chemistry for the Elementary School Teacher Laboratory. One hour.
Prerequisite or corequisite: Chemistry 503.

580. Instrumental Methods of Analysis. Three hours.
Prerequisites: Chemistry 341, 381, 381L, 496C.
The use of electrochemical (ion selective electrodes, polarography and coulometry) radiochemical, thermal (thermogravimetry, scanning calorimetry) and kinetic methods of analysis.

580L. Instrumental Analysis Laboratory. Two hours.
Prerequisite or corequisite: Chemistry 580.

581. Chemical Instrumentation. Four hours.
Prerequisite: Phys. 128 or 138.
A systematic study of electronic measurements including the design and construction of instruments to solve practical chemical problems.

581L. Chemical Instrumentation Laboratory. Two hours.
Prerequisite or corequisite: CHM 581.

585. Interpretive Spectroscopy. Three hours.
Prerequisites: Chem 381, 342.
Fundamental emphasis will be placed on the principles and practice of interpretive spectroscopy. Spectroscopic methods such as IR, Raman, NMR, ESCA and mass spectrometry pertinent to the identification and characterization of organic and inorganic materials will be stressed. The philosophy of the course relates to the combined use of these techniques for structural identification, as opposed to use of a single technique.

CLASSICS (CLC)

Head: Alexander. *Staff*: Best, Brophy, Caveney, Edlund, Gantz, Harris, Klein, LaFleur, Rubin, Thompson, Tucker.

Classical Culture

All courses in this section are given in English translation.

120. Classical Culture: Greece.
A study of the characteristics of Greek literature, made principally through translations of selections from Greek authors.

121. Classical Culture: Rome.
A study of the characteristics of Latin culture, made principally through translations of selections from Latin authors

305H. Classical Culture: Greece.
This course involves studies of important phases of Greek civilization from the Bronze Age through the time of Alexander the Great. Attention is given to history, literature, government, art, and science.

306H. Classical Culture: Rome.
This course involves studies of important phases of Roman civilization through the reading of Latin authors in translation. Attention is given to history, literature, government, art, and science.

310. English Derivatives From Greek and Latin.
General etymology and vocabulary of the English language. Prefixes, suffixes, and root words, as well as families of words will be studied.

330. The Etruscans.
A study of Etruscan culture, emphasizing art and influence on Roman civilization.

331. Pompeii and Herculaneum.
A study of archaeological excavations at Pompeii and Herculaneum and other sites in the area of the bay of Naples.

410. (LIN) Comparative Grammar of Greek and Latin. 5–10 hours.
An introduction to the comparative phonologies and morphologies of Greek and Latin.

450. Classical Mythology.
A study of the myths of Greece and Rome and of their influence in Western literature, art, music, and philosophy.

456. Homer and the Epic Tradition.
A study of Homer in translation emphasizing his influence on later European literature. Analysis of the epic as a literary form; reading of selected epics of other periods.

457. Classical Drama.
A study of translation of tragedies and comedies surviving from ancient Greece. Reading of Greek and Roman plays and of other literature chosen for comparison.

458. Roman Literature in Translation.
Detailed study of selected Latin authors, with special emphasis on biography as literary type.

496H, 497H, 498H. Independent Study and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

Greek (GRK)

Freshmen may elect the three introductory courses in Greek.

201, 202. Elementary Greek.
A double course meeting for two quarters in the elements of the Greek language; study of Greek history, geography, and social customs.

203. Readings in Greek.
Prerequisite: GRK 201 and 202.
Selected readings from Greek authors.

304. Homer.
Prerequisite: GRK 201, 202 and 203 or equivalent.
Detailed study of selections from the *Iliad* or the *Odyssey*.

500. Greek.

Latin (LAT)

Freshmen may elect the three introductory courses in Latin. Students continuing Latin begun in high school will be placed in the appropriate course on the basis of scores on the College Entrance Examination Board Achievement Tests and personal consultations with instructor.

201, 202. Elementary Latin.
A double course meeting for two quarters in the elements of the Latin language.

203. Intermediate Latin.
Prerequisite: LAT 201 and 202 or two high school units in Latin.
Selected readings from Cicero's orations; review of forms and syntax.

304. Readings in Latin.
Prerequisite: LAT 203 or equivalent.
Selected readings from Virgil and Ovid.

400. Advanced Reading Course.
Prerequisite: 10 hours of advanced work in Latin.
Reading in Latin authors; review of grammar; history of Latin literature.

500. Latin.

COMPARATIVE LITERATURE (CML)

Head: Carpenter. *Staff*: Abernathy, Bogue, Craige, Ghezzi, Harrison, Klotz, Kraft, Unger.

121, 122. Western World Literature. 5 hours each.
Prerequisite: ENG 102 or 105H.
A survey of Western World Literature from Homer to the 20th century.

125H, 126H. Western World Literature. (Honors). 5 hours each.
Prerequisite: ENG 102 or 105H.
A survey of Western World Literature from Homer to the 20th century for Honors.

Prerequisite for admission to any of the following courses is a reading knowledge of one foreign language or the consent of the instructor.

301. Introduction to Comparative Literature. 3 hours.
An introduction to the methods and aims of comparative literature with emphasis on genres, themes, and literature and the other arts.

407. Renaissance European Literature.
A survey of the literature of Western Europe (Italian, French, Spanish, Germanic, and English), 1450–1600, with emphasis on literary types and prevailing ideas. Reading of representative works.

408. The Romantic Movement in Western Literature.
A comparative study of the rise and development of Romanticism in the 18th and 19th centuries, with reading of selected literature and criticism.

409. Modern Continental Poetry.
A study of experimental trends in lyric poetry of Western Europe from mid-19th century to the present.

411. Medieval Narrative.
A study of the types of medieval narrative—epic, romance, saga, beast-epic, *fabliau*, and *exemplum*—with reading and an analysis of outstanding examples of these types.

412. 18th-Century European Literature.
A survey of the literature of England, France, and Germany in the 18th century, with emphasis on literary types and prevailing ideas. Reading of representative works.

413. Satire in European Literature.
A comparative study of satire as a literary type. Its history in Western literature will be traced, and outstanding examples of its various types and periods will be studied in detail.

415. The Novel.
A study of the novel as a genre. Origins of prose fiction, theory of the novel, and representative readings from the 16th through the 20th centuries in Spanish, English, French, German, and Russian.

417. The Modern Continental Novel.
A study of the European novel since World War I.

451. Music and Literature.
A comparative study of the forms, relationships, and aesthetics of music and literature.

456. Homer and the Epic Tradition.
A study of the epics of Homer in translation emphasizing their influence on later European literature. Analysis of the epic as a literary form; reading of selected epics of other periods.

457. Classical Drama.
A study in translation of the tragedies and comedies surviving from ancient Greece. Reading of Greek and Roman plays and selected plays of other literatures chosen for comparison.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

DRAMA AND THEATRE (DRA)

Head: Staub. *Staff*: Andres, Baffico, Ballew, Burke, Eidsuik, Fairman, Graham, Head, Hillyard, Kahan, Longman, Rees, Segal, Stell.

105ABC. Applied Drama Laboratory. 1 hour each, freshman year.
An introduction and orientation to the department and its activities.

107. Fundamentals of Oral Interpretation.
Fundamentals of oral reading with emphasis on the basic techniques of analysis and presentation of literature. Development of vocal and physical control through intensive practice.

205ABC. Applied Drama Laboratory. 1 hour.
Three quarter hours required of lower division majors. Individually assigned production and/or performance crew.

222. Survey of Theatre History.
Comprehensive survey and general approach to the history of theatre and its literature.

230. Introduction to Theatrical Design.
Basic design for theatre technicians with emphasis on drafting, perspective, color theory, rendering in various media and drawing the human form. Lecture-Laboratory course.

240. Survey of Dramatic Literature.
Comprehensive survey of dramatic literature and its relation to the theatre from classical to modern times.

250. Beginning Acting.
Participation in daily regimen of exercises for the body and the voice as well as a series of group and individual activities designed to introduce and develop basic acting skills.

300. Appreciation of Great World Theatre.
(Alternate elective for FA 300).
Introduction to all aspects of the theatrical experience on stage, screen, and TV, emphasizing the role of the audience, as well as that of the artist.

301. Introduction to Acting.
A course for the non-drama major designed to introduce and develop basic acting skills.

310H. Introduction to World Drama and Theatre.
(See Drama 300).

333. Stage Costuming and Makeup.
Fundamental techniques of planning, pattern making, and construction of stage and screen costumes. Lecture-laboratory course.

334. Scene Building and Painting.
An introductory course in the arts of the theatre

with emphasis on construction and painting of scenery. Lecture-laboratory course.

400. Playwriting.
Laboratory course in dramatic writing, including study and practice in writing for the modern stage and screen.

401. American Drama and Theatre: Beginnings to O'Neill.
Prerequisite: Two senior division courses in drama or English or consent of the department.
A study of American theatre from its pre-Revolutionary beginnings to World War I with special emphasis on representative plays, playwrights, theatres, actors, movements, and paratheatrical activities of the period.

420. History of Theatre.
Prerequisite: Two senior division courses in English or drama.
A study of the history of dramatic art from Greece through Shakespeare.

421. History of Theatre.
Prerequisite: Two senior division courses in English or classics or drama.
A study of the history of dramatic art from Elizabethan period to Ibsen.

423. Theatre History from Mid-19th Century to the Present.
Prerequisite: Two senior division courses in English, speech, drama, classics, modern foreign language or comparative literature.
A study of the history of dramatic art from the mid-nineteenth century to the present.

429. Play Analysis.
Prerequisite: Two senior division courses in English, Drama, Speech or consent of department.
A study of a method of analysis for dramatic scripts and an intensive examination of selected modern and period play scripts.

433. Period Dress, Manners and Movements for the Theatre.
An advanced survey of dress, manners and movement of selected theatrical periods, concentrating on the dictates of dress and manners upon dance and movement.

448. Afro-American Drama.
A study of the black theatre in America and its dramatic literature.

465. (ENG) Modern Drama.

486. Oral Interpretation of Prose and Poetry.
Prerequisite: Two senior division courses in English, education, drama or speech.
A study of the techniques of literary analysis for effective oral reading of literature and the development of vocal and physical flexibility in its presentation.

488. Readers' Theatre.
Prerequisite: Two senior division courses in English, education, speech or drama.
A study of the theories, techniques and conventions of Readers' Theatre.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

505ABC. Applied Drama Laboratory. 1 hour each.
Individually assigned production and/or performance crew.

511. Theatre Management.
A critical examination of theatre management. A survey of the organization of theatre and promotional and managerial procedures.

530. Play Production for the High School Teacher.
Prerequisite: Two senior division courses in speech, English, drama, or secondary education.
Techniques and methods for meeting problems of play selection and play production in the secondary schools. Suggested elective for teachers of English in high schools.

531. Technical Problems.
Prerequisite: Drama 334 or consent of department.
Advanced study of the theory and techniques of scenery construction with emphasis on materials, equipment, organization, and relations between the production staff.

533. Stage Costume Design and Research.
Prerequisite: Drama 230 and Drama 333. or consent of department.
Research sources and techniques with application to the design of costumes for dramatic presentations.

535. Scene Design.
Prerequisite: Two senior division courses in art or drama or courses in advanced drafting or drawing.
The principles and techniques of scene design and scene painting. Development of floor plans, sketches and scaled models. Suggested elective for majors in the visual arts. Lecture-laboratory course.

536. Stage Lighting.
Study of problems of lighting for the stage and screen; lighting instruments, lighting control; operation of lighting equipment. Practical assignments in stage and film production.

543. Fundamentals of TV Directing. Five double period lectures.
Prerequisite: Two senior division courses in drama.
A study of the theory and practice of TV directing applicable to both commercial and educational television. The course includes the principles and techniques of camera shots, audio and video switching, and creative interpretation. Each student directs exercises utilizing professionally-equipped color television studios.

544. Television Acting and Performing. Five double period lectures.
Prerequisite: Two senior division courses in speech, drama, or radio-television.
The theory and practice of television acting with primary emphasis on dramatic material as it relates to professional television.

545. Advanced Television Directing: Five double period lectures.
Prerequisite: Permission of department.
An advanced study of television directing with special emphasis on dramatic material, video tape editing, and color special effects.

552. Actor Training I.
Prerequisite: Drama 250 or equivalent.
An intensive course in voice and body training. The course stresses the development and use of the voice for the actor.

553. Actor Training II.
Prerequisite: Drama 552 or equivalent.
An intensive course in voice and body training. The course stresses the development and use of the body for the actor.

554. Characterization for the Actor.
Prerequisite: Drama 553 or equivalent.
A study of role analysis and the problems and techniques of creating subtext with special relation to the actor's natural qualities.

555. Period Acting.
Prerequisite: Drama 554 or equivalent.
A study of the problems and techniques of acting in periods and styles through intensive scene study and performance.

560. Play Directing.
Prerequisite: Two senior division courses in drama or consent of department.
An introduction to the methods and procedures of the art of dramatic directing.

561. Play Direction Laboratory.
Prerequisite: Drama 560 or equivalent.
Course concentrates on the director's analysis of the script, the actor-director relationship and theatrical style. Each student directs a one-act play or short film.

571. Play Directing: Periods and Styles.
Lab-lecture course emphasizing methods of directing plays from major periods, including classical, Elizabethan, Neoclassical, and major styles, such as naturalistic, expressionistic and absurdist.

573. Seminar in Stage Costume Design.
Prerequisite: Drama 533.
Advanced problems in historical styles for theatrical costumes. Special problems of construction of costume elements are explored.

575. Seminar in Advanced Scene Design.
Prerequisite: Drama 535.
Advanced study of techniques and resources of scene design, dealing with principles and practices of rendering and composition, design research and styles of scene design.

576. Seminar in Stage Lighting Design.
Prerequisite: Drama 536.
Advanced study of theory and practice of lighting, dealing with advanced forms of circuitry and control equipment, design and execution of light plots for complex stage productions and methods of lighting applied in varying forms of theatrical presentation.

585. Television Producing.
Prerequisite: Permission of department.
The television program from the producer's viewpoint. This course will be concerned with writing, planning, lighting, and scenery requirements, graphics, and sound. Students will have practical experience following production steps in a class project and in a project of their own creation.

592. Creative Dramatics for Children.
A study of the principles, and techniques of creating improvised drama with children.

594. Introduction to Children's Theatre.
A course in the theories and techniques of children's theatre. The production procedure, including play selection, play analysis, and directing techniques, will be emphasized.

596. Puppet Theatre.
A comprehensive survey of the history of puppetry and instruction in the construction and manipulation of puppets, muppets, and marionettes.

ECONOMICS (ECN)

Head: Kamerschen. *Staff*: Allsbrook, Andrew, Beadles, Danielsen, DeLorme, Gilliam, Green, Hayakawa, Hill, Kamerschen, Kelly, Miller, Niemi, Rubin, Sheer, Sushka, White and Wood.

Students may major in economics in *either* the Franklin College of Arts and Sciences *or* the College of Business Administration. A.B. students majoring in economics and seeking advising should go to the Economics Department in Room 101, the College of Business Administration Building (Brooks Hall).

Course listings and descriptions can be found under the Economics section of the College of Business Administration.

ENGLISH (ENG)

Head: Algeo. *Staff*: Agee, Appleby, Austin, Bailey, Baine, Barks, Barnett, Beaumont, Benson, Bufkin, Calhoun, Carson, Colvert, Doyle, Flewellen, Franklin, Free, Gordon, Hatton, Hutcherson, Irwin, Kibler, Kilgo, Krickel, Leamon, Longshore, Lower, Lyles, McAlexander, McWhorter, Magill, Marshall, Martin, Mitchell, Montgomery, Moore, Morris, Patterson, Provost, Shaw, Shields, Spence, Stephenson, Stewart, Thurman, Vorpahl, Waller, Wallis, Washington, Weeks.

Prerequisite. For courses numbered 131 through 399: English 102. For courses numbered 400 and above: English 131 and 132 (or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum).

Freshman Placement Test. All entering freshmen must take the departmental placement test. Performance on this test places a student in 100, 101, or 102. A student placing in 101 exempts 100 with 5 hours credit. A student placing in 102 exempts 100 and 101 with 5 hours credit each. A combined average of C (2.0) in 101 and 102 is required for graduation.

100. Composition Practicum.
Grammar, punctuation, mechanics, diction, sentence structure, and paragraph development, unity, and coherence.

101. English Composition.
Prerequisite: Credit for English 100.
Expository themes on both general and literary topics developed by basic rhetorical methods.

102. English Composition.
Prerequisite: Credit for English 101 by the placement test or earned with a grade of C or better.
Themes on fiction, poetry, and drama.

105H. Composition and Literature (Honors).
A substitute for English 102: Literary works as specimens of effective writing.

131, 132. Masterpieces of Literature in English. 10 hours; 5 hours a quarter.
Prerequisite: English 102.
Masterpieces of literature in English from Chaucer to Faulkner.

135H. Masterpieces of Literature in English (Honors).
Major works in British literature from Chaucer to Blake.

136H. Masterpieces of Literature in English (Honors).
Major works in 19th and 20th century American and British literature.

301. (ROM) Introduction to Folklore.
Folklore: its definition, major fields and theories, and relationships to other areas of learning, such as formal literature and history, music, the visual arts, anthropology, and sociology.

305. Lyric Poetry.
Types, techniques, and interpretations of poems selected from English and American literature.

323. Survey of Afro-American Literature.
Afro-American literature, chiefly of the 20th century: Richard Wright, Langston Hughes, Ralph Ellison, James Baldwin, Chester Hines, and Leroi Jones, with side glances at lesser writers, at Negro folk-tales, and at recent African novelists.

360. Advanced Composition.
Factual writing. Admission by consent of the instructor.

361. The Short Story.
The short story as a literary form.

370. Creative Writing.
Prerequisite: English 360.
Emphasis upon the short story and the personal essay. Admission by consent of the instructor.

400. (LIN) Old English.
The language and literature of England before the Norman conquest, with reading of selected texts.

401. Non-Chaucerian Medieval Literature.
Masterpieces of medieval literature, primarily English. Most works will be read in Modern English translation.

402. Chaucer.
Canterbury Tales, *Troilus and Criseyde*, and minor poems.

403. Milton.
The works and times of John Milton.

404. English Grammar.
English grammar in the scholarly tradition of Curme and Jespersen.

405. The Age of Johnson.
English literature of the late eighteenth century, emphasizing Johnson, Boswell, and Blake.

407. Jacobean Drama.
English drama from 1603 to 1642 exclusive of Shakespeare.

408. English Drama of the Restoration and Eighteenth Century.
Outstanding dramatists of the period: Dryden, Wycherley, Addison, Goldsmith, Sheridan, and others.

411. (LIN) Transformational Syntax.
Grammatical analysis of the English language.

412. Seventeenth-Century Prose & Poetry.
Nondramatic literature of the seventeenth century exclusive of Milton.

413E. (LIN) History of the English Language.
The development of present English through the stages of Old English, Middle English, and early Modern English. Emphasis is placed on the growth of the vocabulary and changes in pronunciation, although grammatical changes receive some attention. Elementary phonetics and phonemics are studied in connection with sound change and dialectal variations in pronunciation.

414. Early Eighteenth-Century Prose and Poetry.
Poetry and prose of the earlier eighteenth century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

416. Early Romantic Literature.
Wordsworth, Coleridge, and other writers.

417. Late Romantic Literature.
Byron, Shelley, Keats, and other writers.

418. Beowulf
Prerequisite: English 400 or reading knowledge of Old English.
The poem in the original Old English, with attention to important critical studies.

420. Early American Writing.
American literature from the beginning through Irving.

421. Old English Literature.
Prerequisite: English 400.
Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

424. The Eighteenth-Century English Novel.
The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

425. American Romanticism.
Representative works of the Romantics and Transcendentalists, with emphasis on Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

426. The Nineteenth-Century British Novel.
The development of the British novel in the nineteenth century.

427. American Realism and Naturalism.
Representative work of the realists and naturalists, with emphasis on James, Clemens, Crane, Norris, and Dreiser.

428. The American Novel to 1900.
The works of major novelists from Cooper through Norris.

429. Southern Literature.
Literary achievement in the South from 1610 to the present, with emphasis upon Poe, Clemens, and Faulkner.

431. Non-Dramatic Literature of the Sixteenth Century.
English prose and verse from More and Skelton to Donne.

432. Practical Criticism.
A critical examination of literary texts with parallel readings in historical criticism.

433. American Poetry to 1900.
Representative poets from Edward Taylor through Stephen Crane.

438. English Drama to 1603.
English drama from the liturgical through the works belonging to the Elizabethan age, excluding Shakespeare.

440. Shakespeare: Part I.
The early plays.

441. Shakespeare: Part II.
The later plays.

442. Victorian Poetry.
Tennyson, Browning, and Arnold.

448. (LIN) English Grammar: Phonology & Morphology.
The phonological and morphological structure of Modern English.

452. Victorian Prose.
Major Victorian prose writers, chiefly Carlyle, Newman, Mill, Ruskin, and Arnold.

459. Modern Irish Literature.
Fiction, poetry, and drama of the Irish Renaissance and after.

461. Twentieth Century British Poetry.
British poetry since the 1890's.

462. Twentieth Century American Poetry.
American poetry from the Imagist Movement to the present.

463. The Twentieth Century British Novel.
Fiction of such representative British novelists of the twentieth century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

464. The Twentieth Century American Novel.
The American novel since World War I.

465. (DRA) Modern Drama.
The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

496H, 497H, 498H. Independent Reading and/or Projects (Honors). 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

ENTOMOLOGY (ENT)

Head: Hunter. *Staff*: All, Atyeo, Berisford, Blum, Brady, Crossley, Dietz, Franklin, Hermann, Himel, Lea, Matthews, Tsao, Wallace, Weathersby.

201. Insects and Man. Five lectures per week.
Designed to acquaint the non-biology major with our dependence on and interaction with insects in today's world.

250. The Hive and The Honey Bee. Three lectures and one three-hour laboratory period.
Prerequisite: none; Biology 102 and Entomology 325 are recommended.
A study of the behavior, life history and seasonal activities of honey bees. The relation of honey bees as the major pollinator of economically important plants will be discussed. Special attention will be given to theory and practice of apiary management.

325. General Entomology. Three lectures and two double laboratory periods.
Prerequisite: Biology 102.
An introduction to insects: the anatomy, physiology, habits and classification of important groups will be emphasized. The importance of insects as competitors for food, and their role in the ecosystem will be stressed.

374. Agricultural Entomology. Three lectures and two double laboratory periods.
Prerequisite: Biology 102.
A brief introduction to entomology followed by a study of the recognition and control of insect pests of crops and animals. An introductory course designed for non-entomology majors.

376. Medical Entomology. Three lectures and two double laboratory periods.
Prerequisite: Biology 102.
A brief introduction to entomology followed by a study of the species of insects and related arthropods of particular importance in the cause or transmission of diseases of man and the lower animals.

382. Forest Protection: Entomology. 3 hours. Two lectures and one double laboratory periods.
Prerequisite: Biology 102.
A brief introduction to entomology followed by a study of the insect pests of American forests.

384. Urban and Industrial Entomology. Three lectures and two double laboratory periods.
Prerequisite: Entomology 325 and 374 or 376 or 382 or Biology 102.
A study of the recognition, biology and control of insect pests and other arthropod forms which infest areas inhabited by man.

390. Special Problems in Entomology. 1-5 hours.
Prerequisite: Consent of instructor.
A course designed to permit interested and well-prepared undergraduate students to pursue an entomology problem approved by the staff member under whom the work will be done.

401. Insect Taxonomy. Three lectures and two double laboratory periods.
Prerequisite: Entomology 325.
The principles of taxonomy with practice in the classification of all orders of insects.

415. Insect Physiology. Three lectures and two double laboratory periods.
Prerequisite: One course in organic chemistry and Entomology 460; one of the following courses: Biology 330, Botany 380, or Zoology 390 or equivalent.
An introduction to the general physiological processes and functions of the various organ systems of insects.

440. Insect Behavior. Three lectures and one 3 to 4 hour laboratory period.
Prerequisite: Entomology 325.
An evolutionary approach to the principles of behavior with emphasis on reproduction,

mimicry, insect-plant interactions and the development of sociality.

450. Insect Ecology. Three lectures and two double laboratories.
Prerequisite: 10 hours in biological sciences at 300 level or higher.
A study of the processes and functional aspects of insect population and community ecology with emphasis on interactions between structure and the environment.

455. Advanced Honey Bee Biology and Apiculture. Daily lectures and field demonstrations.
Prerequisite: Entomology 250 or equivalent, or permission of instructor.
A course designed to provide the student with practical experience in all phases of colony manipulation, management and disease control.

460. Insect Morphology. Two lectures and three double laboratory periods.
Prerequisite: Entomology 325.
An introduction to insect structure and phylogeny.

470. Insect Histology. Two lectures and three double laboratory periods.
Prerequisite: Entomology 460 or equivalent, or permission of instructor.
Comparisons of the histology and anatomy of insects with other invertebrates and vertebrates. Insect tissues are dissected and preparation of the major body systems are examined for gross and microscopic differences.

474. Applied Systems of Insect Control. Three lectures and two double laboratory periods.
Prerequisite: ENT 374 or permission of instructor.
Description of the major applied insect control techniques excluding insecticidal. Discussion of the advantages and limitations of these techniques including practicality, economics, environmental impact, etc. Final portion of the course will consider integrated control systems for development of a pest management program.

477. Chemistry and Toxicology of Insecticides and Fungicides. Three lectures and two laboratory periods.
Prerequisite: one course in organic chemistry and one of the following entomology courses: 374, 376, or 382.
A study of the biology, use, metabolism, residue analysis, and impact of insecticides and their alternatives in agriculture and in the environment.

480. Introductory Acarology. Three lectures and two double laboratory periods.
Prerequisite: One senior division course in biological science.
Classification, ecology and biology of the major groups of mites.

482. Entomology in Natural Resources Management. Two lectures and one three-hour laboratory.
A study of arthropods which are important in forest resources management, including timber, wildlife, and recreation.

492A. Field Entomology. 5 hours.
Prerequisite: ENT 401 and consent of instructor.
An extended summer field trip of 2–4 weeks during which the collection, identification and distribution of insects with respect to selected ecological habitats will be studied.

494. Aquatic Entomology. Three lectures and two double laboratory periods.
Prerequisite: ENT 325. Offered Spring Quarter, even years.
An introduction to taxonomy, life history and ecology of aquatic insects.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

573. Entomology for Teachers. Two lectures and three double laboratory periods.
Prerequisite: Two elementary courses in biological science and two courses numbered 300 or above in biological science or education.
A study of insects and related forms found on land and in water; their identification and life habits with emphasis on the use of these forms in the teaching of high school biology.

FINE ARTS (FA)

Given under the general direction of the chairman of the Division of Fine Arts.

300. Music and the Visual Arts.
Nature and materials of the visual arts in their relation to man, with emphasis on the influence of art products in contemporary living and thinking. A field of study comprising painting, sculpture, architecture, graphic arts, arts of industry and commerce. Also a study of works of

outstanding figures in music taken chronologically. No credit is allowed for both FA 300 and ART 300 or 317, MUS 300, 343, or 259H.

GEOGRAPHY (GGY)

Head: Wheeler. *Staff*: Barnes, Barrow, Berentsen, Brook, Burrill, Cox, De Vorsey, Fisher, Heyl, Hoy, Jensen, Kenyon, Meade, Meentemeyer, Melvin, Pannell, Prunty, Schretter, Shear, Stone, Welch, Woodruff.

Human and Regional Geography

A major selected primarily from the following courses leads to an A.B. degree.

101. Geography of the Developed World.
A survey of the technologically advanced nations of the world emphasizing the resources, culture characteristics, and economic activities of each region.

102. Geography of the Underdeveloped World.
A regional survey of the less technologically advanced regions of the world emphasizing problems of economic development and sociodemographic patterns.

215H. World Cultural Geography (Honors).
Identification of and use of basic geographic concepts in analysis of social, economic, and political problems at local, regional, and worldwide scales. Fild observations provided in field trips. Not open to students with credit for Geography 101.

341. Problems in Political Geography.
Structure and function of political regions with emphasis on the sovereign state. Sources of national strength, internal conflict, and problems in international relations. Examples from recent developments and current situations.

358. Economic Geography.
Prerequisite: Geography 101, 102 or Economics 112.
Location factors and principles, utilizing theoretical and empirical studies. Focus upon the spatial organization of economic production, consumption, and exchange systems.

375H. Man and Landscape in Modern China.
Contemporary China, its physical environments and human patterns as they exist and are differentiated regionally, form the main topics. The course seeks to examine and analyze the way in which China and the Chinese have organized their territory traditionally as political, economic, and social systems and identify recent trends associated with a revolutionary political shift and a new approach to modernization and national development.

436. Geography of the South.
Prerequisite: 10 hours in courses from one of the following departments: geography, history, or economics.
Geographical appraisal of the southeastern states, including physical and human resources, settlement and population, agriculture, the extractive industries, transportation and present urban settlements. Current progress and major problems in southeastern development.

438. (HIS) Historical Geography of Eastern North America to 1783.
Evolution of settlement systems and their distributions in pre-Revolutionary North America; modifications in natural landscapes and resources as the colonial cultural landscape developed. Comparative geography of the early regions of eastern North America.

439. (HIS) Historical Geography of Eastern North America, 1783–1860.
Expansion settlement systems and their distribution into the trans-Appalachian regions during the early 19th century. Comparative geography at mid-19th century of the regions of eastern North America.

441. Caribbean America.
Prerequisite: 10 hours in geography or an equivalent background in Spanish, history, economics, or anthropology.
A regional analysis of the Caribbean area with emphasis upon the physical, cultural and economic factors affecting man's use of his resources.

442. South America.
Prerequisite: 10 hours in geography or an equivalent background in either Spanish or history.
A regional analysis of the geography of equatorial and southern South America including physical, cultural, and economic characteristics of the several regions. Stress upon prospects for expansion of settlement, developments of resources and growth of industries.

444. Europe and the Mediterranean.
Prerequisite: 10 hours in geography, or in history, political science, or modern languages.
A regional analysis of Europe, exclusive of the Soviet Union, designed to reveal the unique cultural, physical and economic character and problems of the several European nations.

446. Geography of the Soviet Union.
Prerequisite: 10 hours in geography, or an equi-

valent background in history or political science or modern languages.
A systematic and regional analysis of the industrial, agricultural, urban, population, and physical geography of the USSR. Designed to evaluate, within the framework of the state's ideology and centrally-controlled planned economy, its spatial organization and consequent economic and political strengths and weaknesses.

448. Geography of East and Southeast Asia.
Prerequisite: 10 hours in geography, or an equivalent background in history or political science.
Regional analysis of cultural and physical geography of Southeast Asia including land utilization, settlement, raw material, population characteristics and distributions as each relates to economic and political problems. Emphasis on Japan, China, Philippines, and Indonesia.

452. Geography of Northern Lands.
Prerequisite: 10 hours in geography.
A description and analysis of the distribution of people, resources and occupations in the northern high latitude areas bordering the Arctic Ocean.

459. North American Urban Geography.
Prerequisite: Two courses from Geography 350, 358, or Economics 133.
Analysis of urban land occupance and its morphological-functional aspects. Introductory location theory in urban areas. Procedures in geographical analysis of agglomerated settlements.

460. North American Industrial and Transportation Geography.
Prerequisite: Geography 358.
Theories of industrial location. Detailed locational analysis of selected manufacturing industries. Regional treatment of the spatial structure of North American manufacturing.

461. North American Rural Land Use.
Prerequisite: 10 hours from Geography 350, 358, 459, 460; or 10 hours in 300-level courses from economics, botany or agronomy approved by instructor.
Regional analysis of climate, soils, landform bases of American agriculture. Origins and dispersals of cultivated plants and livestock; American systems of rural land use and settlement in their regional settings. Contemporary problems in land use and its geographical analysis.

463 (MKT). Geography of Transportation.
Prerequisite: Geography 358 or Marketing 559.
Survey of historical, engineering and economic aspects of North American transport. Influence of modal characteristics on economic phenomena. Survey of regional commodity movements at various scales. Principles and theories explaining role of transportation in regional planning, and in location of economic and political phenomena.

466. Field Problems in Urban Geography. 3 hours. Three laboratory periods.
Prerequisite: Geography 350 and 459.
Field techniques in reconnaissance and analysis of urban areas.

468. Urban Transportation and Land Use.
Prerequisite: Geography 459 or Marketing 559.
Reciprocal relations between urban transportation, both freight and passenger, and urban land use organization in terms of site requirements, traffic generation characteristics and circulation problems.

470. Geography of Rural Settlement.
Prerequisite: 10 hours in geography or consent of instructor.
Description and analysis of major patterns of rural settlement, and the primary processes of rural settling in representative world areas.

472. Geography of World Population Distribution.
Prerequisite: 10 hours in geography or consent of instructor.
A description of contemporary patterns in world and continental distributions of people and locational analyses of these patterns and their changes.

496H, 497H, 498H. Independent Reading and/or Special Projects
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500AB. Concepts and Materials in Geography for Teachers. 3 hours each.
Prerequisite: Graduate status plus two years teaching experience.
Does not carry graduate credit for the M.A. or M.S. degrees. Evolution of the discipline, its current conceptual core; areal "element-complexes"; systematic vs. regional analytical procedures. Systems for derivation of field data; standard bibliographical, statistical cartographic and photogrammetric source. Procedures in adapting information from the several sources to the classroom.

501, 502. Principles in Regional Geography for Teachers. 5 hours each.
Prerequisite: 10 hours in geography or two years of teaching experience.
Does not carry graduate credit for the M.A. or M.S. degrees. A course designed to inculcate principles and concepts in regional geography through intensive analysis of regions selected on a world-wide basis.

Physical Geography

A major selected primarily from the following courses may lead to either the A.B. or B.S. degree.

104. Earth Science Survey. Not open to students with credit in either Geography 120, 121 or 122.
An introduction to physical geography, surveying climate, vegetation, soils, landforms, and water resources in their areal interrelations and distributions.

214H. World Physical Geography (Honors). Not open to students with credit for Geography 120, 121, or 122.
Study of processes of weather, climate and landforms; analysis of relationships among climate, landforms, vegetation, soils and water; assessment of broad patterns of these phenomena on the earth. Field observation provided in field trips.

120. Introductory Weather and Climate. Three lectures and two laboratory periods.
Components of weather, weather processes, and their measurement. Climatic elements and their control factors. Geographic classification of climatic and vegetative types on the earth's surface.

121. Introduction to Landforms. Three lectures and two laboratory periods.
Introductory analysis and classification of major types of land surfaces, stressing geographic characteristics. Study and interpretation of relationships between landforms and other phenomena through maps, air photos, and field observations. World coverage with stress on North America.

122. Introduction to Bio and Soil Geography. Three lectures and two laboratory periods.
Analysis of world variation and distribution of vegetation and soils and the special climates associated with these distributions. Also studied are the distributions of some related animal populations. Field trips provide first-hand information.

350. Cartography and Graphics. Five laboratory periods.
Introduction to methods of preparing maps, charts and diagrams. Cartographic theory and techniques; use of basic cartographic equipment; compilation of, symbolization on and design of drawings; methods of map reproduction.

391. Directed Map and Photogrammetric Compilation. 3 hours. Three laboratory periods.
Prerequisite: Geography 350 or 420.
Problems in producing maps from air photos and other sources. Obtaining and compiling data, and processing source materials. Writing specifications for drafting and reproducing drawings. Practice with advanced instruments.

400. Advanced Terrain Analysis.
Prerequisite: Geography 121, or Geology 125, or permission of instructor.
Identification of terrain parameters, their quantitative expression and areal variations. Emphasis on small stream basin analysis, and fluvial morphology.

401. Advanced Climatology. Four lectures and one laboratory period.
Prerequisite: 10 hours in geography, including 120.
Intensive study of controlling factors of climate. Heat-balance, evapotranspiration, water-budget concepts. Koeppen classification system in detail. Regional analysis of climatic types and anomalies.

402. North American Physiography.
Prerequisite: Geography 121 or Geology 125 or permission of instructor.
Detailed analysis of North American physiographic provinces, their subdivisions, geomorphic features, geographic relationships.

406. Synopic and Observational Meteorology. Three lectures and two laboratory periods.
Prerequisite: Geography 120 plus either Physics 128 or 138.
Study and practice in meteorological observational procedures. Analysis of upper air and surface maps; the prognosis and forecasting problem.

410. Conservation Ecology and Resource Management.
Prerequisite: Consent of instructor.
An ecologic and economic analysis of the interaction of man and environmental resources within different cultural and geographical contexts with emphasis on environmental quality, planning and decision-making. The ecosystem

concept is the basic framework for the course, and the major ecosystems of the earth are viewed as discreet resources.

416. Cartographic Design and Reproduction. Three lectures and two laboratories.
Prerequisite: Geography 350 or consent of instructor.
Principles of design, readings from the literature, map reproduction methods and their effects on design. Practice in the production of thematic maps from the collection of data to their final form; use of advanced instruments.

420. Use and Interpretation of Aerial Photographs. Three lectures and two laboratory periods.
Prerequisite: Four or more quarters of forest resources or agriculture, or Geography 350, or permission of instructor.
Principles of air photo interpretation and photogrammetry. Use of photos and photogrammetric instruments in planimetric, topographic and type mapping; in remote-sensing; in making measurements and inventories; in sampling; and in planning. Emphasis on interpretation of terrain, vegetation and culture.

422. Advanced Photogrammetry. 3–5 hours.
Prerequisite; Geography 420.
Directed work on photogrammetric problems related to the interests of individual students. Mastery of photogrammetric techniques and instruments.

423. Remote Sensing of Environment.
Prerequisite: Physics 128, Geography 420, or permission of instructor.
A consideration of the principles of remote sensing with emphasis on aerospace applications in the natural sciences. A review of fundamental properties of the electromagnetic spectrum followed by studies of remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems. The course is oriented toward the particular interest of participating students.

425. Field Methods in Physical Geography. 4 hours.
Prerequisite: 15 hours in geography courses numbered above 200 including Geography 350, plus at least a B average in junior-senior major courses.
Methods of measurements, observation, recording, and synthesis of field data. Field analysis of all features in one small type-area required, including completed maps and written report in which recorded data are correlated and synthesized. Required for all graduate majors.

429. Special Problems in Area Analysis. 3–5 hours.
Prerequisite: 15 hours in courses numbered above 300 in geography. Approval of instructor concerned, and head of department, must be obtained for admission to this course prior to registration.

476. Vegetation of North America.

GEOLOGY (GLY)

Head: Herz. *Staff*: Allard, Carpenter, Carver, Dallmeyer, Frey, Giardini, Gonzales, Hayes, Henry, Laerm, Oertel, Pierce, Pinet, Rich, Sen Gupta, Stanley, Stormer, Wenner, Whitney.

105. Geology for Elementary Teachers.
A self-paced, modular course. A laboratory centered study of basic principles in geology designed for prospective elementary school teachers. The course utilizes modular and self-paced instruction. Enrollment is limited to students in the College of Education majoring in Early Childhood, Middle School, or Elementary Education.

125. Elements of Geology (Physical). Three lectures and two laboratory periods.
Fundamental principles of physical geology: the nature and origin of rocks and minerals; the mechanisms and processes of vulcanism, metamorphism, weathering, erosion, soil formation, sedimentation, and glaciation; how landforms evolve. The tectonic processes of continental drift, sea-floor spreading, and plate-tectonics are discussed and their effects are evaluated.

126. Elements of Geology (Historical). Three lectures and two laboratory periods.
A continuation of Geology 125. Methods by which earth history is interpreted. Geologic history of North America. Time scale. Evolution of plant and animal kingdoms.

235H. Physical Geology (Honors). Three lectures and two laboratory periods Not open to students with credit in Geology 125.
Nature and origin of minerals and rocks. Physical processes that shape the earth; gradation, deposition, vulcanism, glaciation, weathering, rock deformation, mountain building, and metamorphism. Mineral resources.

236H. Historical Geology (Honors). Three lectures and two laboratory periods. Not open to students with credit in Geology 126.
A continuation of Geology 235H. Age of the earth; geologic time scale. Fossils, evolution and

faunal succession. Organizing the stratigraphic record. History of the earth as recorded in rocks. Evolution of North America and the development of life on earth.

301. Gems and Gem Materials.
Gem materials; historical, cultural, mineralogical, technological and scientific aspects. The identification and evaluation of gems.

302. Mineral Resources and the Environment. Five lectures plus field trips.
Historical influence of mineral resources. Energy resources and domestic energy policy. Mineral economics, environmental problems and sufficiency of mineral resources. Resource recovery and future mineral technologies.

303. Elementary Oceanography.
Introduction to oceanography, especially its geological aspects. Origin, development and major physiochemical properties of marine waters, basins, sediments, and mineral resources. Classification of marine environments. Review of constructive and destructive marine processes. Overview of interdisciplinary relationships. This course may not be used in sequence to satisfy the physical science requirement for the A.B. degree.

321. Introduction to Mineralogy and Crystallography. Two lectures and three laboratory periods.
Prerequisite: Chemistry 121.
Physical and chemical properties of minerals, their rock-associations, modes of occurrence, industrial uses. Properties of crystals, crystal systems and their geometrical characteristics.

323. Petrology. Two lecture and three laboratory periods.
Prerequisite: Geology 321.
Characteristics of the common igneous, sedimentary, and metamorphic rocks. Their classification and field identification.

332. Structural Geology. Four lectures and one laboratory period.
Prerequisite: Geology 125; Geology 323 recommended.
Geologic structures and their recognition in the field. Framework of the earth's crust; origin of mountains, continents, oceans. Physical properties and behavior of rocks; solution of structural problems.

403. Invertebrate Paleontology. Three lectures and two laboratory periods.
Prerequisite: Geology 126 or Biology 102.
Study of fossil invertebrates emphasizing relationships in anatomical structures of living and extinct organisms. Classification. Geologic history of all invertebrate phyla.

404. Geology Seminar. 1–6 hours.
Reviews and discussions of classical studies; lectures on current research, new developments. Special lectures by visiting scientists.

405. Sedimentation and Stratigraphy. Three lectures and two laboratory periods.
Prerequisite: Geology 126; Geology 323 recommended.
The origin and distribution of sedimentary rocks. Environmental conditions involved in the transportation and deposition of sediments. Vertical sequences and lateral correlations in layered rocks. Typical stratigraphic associations.

407. Geology of the Southern States. Three lectures and two laboratory periods.
Prerequisite: Geology 125 and 126.
Structural and stratigraphic relationships in southern geology, analyzed in terms of distribution, lithology, and economic implications.

408. Optical Mineralogy. Three lectures and two laboratory periods.
Prerequisite: Geology 321 or equivalent.
Determination of the optical properties of minerals with the petrographic microscope. Identification of the common rock-forming minerals using oil immersion and thin section techniques. Introduction to the petrographic description of rocks.

409. Marine Geology.
Prerequisite: Geology 125 and Geology 405.
Study of the geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

411. Principles of Geochemistry. 3 hours. Three lectures.
Prerequisite: Chemistry 122, Physics 128, and Geology 323.
Composition of the earth. Distribution of elements in minerals and rocks. Principles governing the migration and concentration of elements. Introduction to nuclear geology and geochemical prospecting.

412. Palynology. Three lectures and two laboratory periods.
Prerequisite: Geology 126 and Biology 102, or approval of instructor.
The application of of pollen and spore analysis to geological, botanical, ecological, aerobiological, and archeological studies, with practical experience in extraction, identification and interpretation of pollen and spore diagrams.

413. Paleobotany. Three lectures and two laboratory periods.
Prerequisite: Geology 126 and Biology 102, or approval of instructor.
Phylogeny and taxonomy of fossil plants with

emphasis on their use in stratigraphic, paleoclimatic and paleoecological studies.

414. Crystallography (Morphological and X-Ray). Three lectures and two laboratory periods.
Prerequisite: Math 253.
Symmetry elements, crystal projections, point groups, space groups, crystal systems, crystal notation, optical goniometry. Determination of cell dimensions and space group; X-ray powder methods, single crystal X-ray methods.

422. Hydrogeology. Four lectures and one laboratory period.
Prerequisite: Geology 125 and 126 or equivalent.
The hydrologic cycle and review of the quantitative treatment of its elements. Quantitative methods for ground-water flow, open-channel flow, sediment transport, channel characteristics, and drainage networks. Introduction to water chemistry and quality. Water as a resource. (Surface hydrography is covered in detail in FRS 411/611.)

425. Field Methods in Geology. 2 hours.
Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data.

426. Geologic Mapping of Saprolite. 3 hours.
Prerequisite: Geology 323.
The weathering processes of saprolitization. The recognition of parent rock by the field examination of saprolite. Geologic mapping in deeply weathered terrains. Preparation of a geologic map.

427. Geology Field Camp. Five field weeks in June and early July.
Prerequisite: Geology 321, 323, 332; Geology 405 recommended.
Introduction to geologic mapping techniques: training in the use of aerial photographs, topographic maps, and stereographic projections; basic methods of description and measurement of stratigraphic sections. Regional geologic settings stressed through reports which accompany field maps.

430. Clay Mineralogy. 4 hours. Three lectures and one laboratory period.
Prerequisite: Geology 321; Geology 405; Chemistry 121.
Structures and properties of clay minerals. Effects of environmental factors on their origin and uses. Identification of clay minerals by optical and X-ray methods.

431. Metallic Ore Deposits. Five lectures plus field trips.
Prerequisite: Geology 321 and 332.
Classification and origin of metallic ore deposits; relationships between mineral deposits and host rocks; ore controls. Discussion of the major deposits of base metals, precious metals and ferrous metals.

432. Non-Metallic Ore Deposits. Four lectures, one laboratory period plus field trips.
Prerequisite: Geology 321 and 332.
Classification and origin of industrial rocks and minerals. Relationships between deposits and formative geologic processes. Emphasis on resources important in domestic and international trade. Economics of exploration and development.

435. Geochemistry and Petrology of Ore Deposits. Three lectures and two laboratory periods.
Prerequisite: Chemistry 121; Geology 434.
Applications of geochemistry and isotope geology to problems of ore deposits. Petrology of major classes of ore deposits.

436. Exploration and Evaluation of Ore Deposits. Four lectures and one laboratory period.
Prerequisite: Geology 321 and 332.
Exploration methods. Surface expression of buried ore deposits. Planning drilling programs. Computation and presentation of ore reserve estimates. Mine valuation and financing.

437. Geostatistics. Four lectures and one laboratory period.
Prerequisite: Statistics 200 or Statistics 421.
Statistics applied to geology. Distributions, sampling, inference, analysis of variance, distributions and transformations, variability in geological data.

438. Geology of Energy Resources. Four lectures, one laboratory period plus field trips.
Prerequisite: Geology 332 and 405.
Origin and occurrence of principal geologic energy resources: petroleum, coal and uranium. Discussion of tar sands, oil shale, synthetic hydrocarbons from coal and geothermal steam. Emphasis on major deposits, reserves, exploration practices, production methods, economics and environmental considerations. Domestic energy policy.

441, 442, 443. Introduction to Research. (Field to be inserted). 2-5 hours credit each.
A. Mineralogy
B. Geochemistry
C. Geophysics
D. Oceanography
E. Petrography
F. Petrology
G. Stratigraphy

J. Paleontology
K. Palynology

An introduction to the literature of geology, research procedures and instrumental techniques.

444. Principles of Chemical Mineralogy.
Prerequisite: Chemistry 122; Math 254; Physics 128.
The study and application of thermochemical principles and methods to problems in mineralogy, petrology, and geochemistry.

445. Geochronology and Isotope Geology. 3-5 hours.
Prerequisite: Chemistry 122.
Introduction to the theory and application of age determination of natural meterials. Application of isotopes as tracers in natural processes and as geothermometers.

450. Vertebrate Paleontology. Three lectures and two laboratory periods plus field trips.
Prerequisite: Zoology 226 or Geology 126.
The evolution of vertebrate animals as seen in the fossil record, with emphasis on their relationships, ecology, and functional morphology. Same as Zoology 426.

451. Micropaleontology. Three lectures and two laboratory periods.
Prerequisite: Geology 126 or Biology 102.
Morphology and systematics of principal groups of animal microfossils. Stratigraphic, paleoecologic, and phylogenetic relationships, with particular emphasis on Foraminifera.

452. Introduction to Paleoecology. Four lectures and one laboratory period.
Prerequisite: Geology 403 or equivalent.
Study of factors governing the abundance and distribution of ancient marine and terrestrial organisms. Comparisons with ecology of extant invertebrates, vertebrates and plants. Preservability and taphonomy of fossil assemblages. Survey of general ecological principles.

460. Solid Earth Geophysics.
Prequisite: Geology 323, Physics 128, or equivalent; and Math 254.
Application of the principles of physics to understanding the dynamic and bulk properties of the solid earth. Topics covered include earthquake seismology, geology, geomagnetism, the thermal history of the earth, and the composition and state of the earth's interior.

461. Planetary Geology. 4 hours. Two lectures, one seminar, and one laboratory period.
Prerequisite: Geology 323 and 332.
Geology of the moon and extraterrestrial planets: composition, structure, planetary geological processes, origin, and history. Literature and techniques of astrogeology.

462. Exploration Geophysics. Three lectures and two laboratory periods.
Prerequisite: Geology 323 and 332, Math 254, and Physics 128.
Application of the principles of geophysics to determine the presence and extent of economically valuable deposits of minerals or energy sources beneath the earth's surface. The course covers gravity, seismic reflection and refraction, magnetic, and electrical techniques, as well as geothermal exploration.

463. Photogeology. 4 hours. Two lectures and two laboratory periods.
Prerequisite: Geology 323, 332; Geography 420/620; recommended—Geoology 405/605.
Advanced principles of photogeology. Geologic interpretations and measurements from aerial photography. An introduction to geologic interpretation of color photography and spacecraft imagery of planetary surfaces.

496H, 497H, 498H. Independent Study and/or Projects.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500. Geology for Teachers. Lecture and demonstration.
Prerequisite: 20 hours physical and/or biological sciences, at least 5 of which must be chemistry. Not open to Geology majors.
Cultural and practical aspects of earth study. Identification of common rocks and minerals. Geologic principles and processes; outline of earth's history.

501. Principles of Science for Teachers—Earth Science. Three 2-hour lecture-demonstration class sessions and two 2-hour laboratory sessions each week, and a full-day trip on alternate weeks.
This course in earth science is designed specifically for elementary and junior high school teachers in science. Not open to geology majors.

520. (LAR) Environmental Geology. Four lectures and one laboratory period plus field trips.
Discussion of geologic materials and processes with an emphasis on environmental interpreta-

tion for planning, land use and construction practices. Role of water, geologic hazards and geotechnical inputs to environmental-impact assessment. Site evaluation, sequential land use, mined-land reclamation and waste management.
Course not open to Geology major or Geology graduate students.

GERMANIC AND SLAVIC LANGUAGES

Head: Steer. *Staff*: Barrick, Cooper, Edlund, Howard, Jorgensen, Krispyn, Lewis, Nicolai, Popov, Rogers, Zigelis.

A student continuing a language taken in high school will be placed in the appropriate course on the basis of scores on the College Entrance Examination Board Scholastic Achievement Tests and other pertinent information.
No student may receive credit for any course which is a prerequisite to a course for which he has already received college credit. Exception may be made only by the head of the department.
Majors in German or Russian must satisfy the relevant Bachelor of Arts Degree requirements of the Franklin College of Arts and Sciences as defined in this Bulletin.
Opportunity for study at the University of Erlangen/Nürnberg in Germany is offered under the University System of Georgia Studies Abroad Program every summer. German 410, German 420 or equivalents, and one other course are usually offered.

German (GER)

Any course numbered below 200 is considered elementary and will not count toward the minimum of 20 hours required to major in language.
German 103 and higher numbered courses are conducted largely in German.

101, 102. Elementary German. 5 hours each.
Fundamentals of grammar, pronunciation, conversation, composition, reading, and translation. Additional language laboratory work required.

103. Intermediate German.
Prerequisite: German 102 or two entrance units in German.
Grammar, reading and translation of intermediate texts, composition, and conversation. Additional language laboratory work required.

104. Intermediate German.
Prerequisite: German 103.
Readings in modern German prose, composition and conversation. Additional language laboratory work available.

114H. German: Accelerated Intermediate German.
The course reviews the grammar and emphasizes conversation, composition and reading ability. German is the language of instruction.

120. Techniques of Translation.
Prerequisite: Permission of instructor.
Review of grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical German texts into correct English.

145. German Diction. 1 hour.
Prerequisite: Permission of instructor.
A study of German pronunciation, with special emphasis on the fundamentals of German phonetics and sound production as applied to reading and singing. Primarily for voice majors.

201. Introduction to German Literature.
Prerequisite: German 104 or equivalent.
May be taken before or after German 202.
A study of the main literary movements and representative works before 1900 in the original language.

202. Introduction to German Literature.
Prerequisite: German 104 or equivalent.
May be taken before or after German 201.
A study of the main literary movements and representative works of the 20th century in the original language.

210. Conversation and Composition on Contemporary Topics.
Prerequisite: German 104 or equivalent.

310. Literature and German Culture.
Prerequisite: German 104 or permission of instructor.
The role of literature in the philosophical, political, and sociological trends of the 19th and 20th centuries.

410. Advanced Composition and Conversation.
Prerequisite: German 210 or equivalent.
Advanced oral-aural language study including phonetics and linguistics, combined with advanced grammar and stylistics.

420. German Culture.
Prerequisite: German 201 or 202 or equivalent.
German cultural history from Luther to the present.

425. Survey of German Literature.
Prerequisite: German 201 or 202 or equivalent. German literature from the Old High German Period to the present. Texts from the older period will be read in New High German translation.

430. German Drama Since Lessing I.
Prerequisite: German 201 or 202 or equivalent. Reading and interpretation of texts in their historical and literary-historical context.

432. The Age of Goethe I.
Prerequisite: German 201 or 202 or equivalent. The Sturm und Drang group, including Goethe and his role in it, Schiller's work, other contemporaries, including Hölderlin and ending with Schiller's death in 1805.

433. Age of Goethe II.
Prerequisite: German 201 or 202 or equivalent. The older Goethe, from Schiller's death in 1805 to 1832. Emphasis on Goethe's mature works, *Wahlverwandtschaften*, *Westöstlicher Divan*, and *Wilhelm Meisters Wanderjahre*.

434. Goethe's Faust I and II.
Prerequisite: German 201 or 202 or equivalent. Reading and interpretation.

435. German Novelle of the 19th and 20th Centuries.
Prerequisite: German 201 or 202 or equivalent. The development of the genre, reading and interpretation of representative texts.

436. German Romanticism.
Prerequisite: German 201 or 202 or equivalent. German Romanticism from 1790 to 1825. The study of this movement in regard to its literary, historical and cultural context.

437. Modern German Literature.
Prerequisite: German 201 or 202 or equivalent. Reading and interpretation of representative samples of 20th century literature.

438. (LIN) Contrastive Grammar: German/English.
Prerequisite: Two years of college German or permission of instructor.
The course prepares future teachers of German to isolate and identify pedagogically important structural similarities and differences.

439. The German Lyric.
Prerequisite: German 201 and 202 or permission of instructor.
A study of German lyrics and ballads from the time of the Minnesingers to the present.

441. Modern German Prose.
Prerequisite: German 201 and 202 or permission of the instructor. Reading and interpretation of selected important novels and novelle.

446. (LIN) Linguistic Structure of German.
Prerequisite: Two years of college German or permission of the instructor. Emphasis on phonetics, phonology and intonation, with introduction to the overall structure of German.

452P. (HIS) Survey of German History Since the Reformation.
Prerequisite: 20 hours of German above 104 or permission of the instructor.
An interpretative survey of German history since the Reformation. The impact of political developments and cultural trends will be stressed. The German language will be used in lectures and seminar sessions.

496H, 497H, 498H. Independent Study and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

German Translation (GET)

300. Modern German Literature in Translation.
Prerequisite: Permission of instructor.
Representative work of German, Scandinavian or Netherlandic literature in English translation.

320. Medieval German Literature in Translation.
Reading and discussion in English of selected masterpieces of medieval German literature (e.g. Hildebrandslied, Tristan and Isolt, Parzival, Nibelungenlied, etc.). Topics such as medieval genres, problems in medieval literature, main currents of medieval thought, the medieval world-view, etc. will be included.

Netherlandic (NET)

101. Elementary Netherlandic.
An introduction to modern Netherlandic as spoken in Holland and the northern part of Belgium, with an emphasis on practical command of the language.

399. Independent Study in Netherlandic. 1–5 hours. Max. 15 hours.
Prerequisite: NET 101 or equivalent.
This course affords the advanced student opportunity to conduct independent study and research under the direction of individual staff members.

Swedish (SWE)

350. Techniques of Translation of Swedish.
The course is designed to give a basic background in grammar and practice both in reading and speaking Swedish. The reading will include samples of Swedish literature and texts which illustrate various aspects of Swedish culture.

351. Techniques of Translation of Swedish Continued.
Prerequisite: SWE 350 or equivalent.
Emphasis will be placed on difficulties of translation, elements of style, and analysis of literary texts.

399. Independent Study in Swedish. 1–5 hours. Max. 15 hours.
Prerequisite: SWE 350 or equivalent.
This course affords the advanced student opportunity to conduct independent study and research under the direction of individual staff members.

Russian (RUS)

101, 102. Elementary Russian. 5 hours each.
Grammar and composition, conversation, reading and dictation.

103. Intermediate Russian.
Prerequisite: Russian 102.
Intermediate grammar, reading, conversation, dictation, and composition.

104. Intermediate Russian.
Prerequisite: Russian 103.
Advanced grammar, reading, oral and written composition, conversation, dictation.

120. Techniques of Translation.
Prerequisite: Permission of the instructor.
Review of grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical Russian texts into correct English.

310. Russian Composition and Conversation.
Prerequisite: Russian 104 or equivalent.
The course is designed to promote the student's ability to express himself accurately in speaking and in writing Russian and to develop his ability to understand native Russian speech. The course is conducted in Russian and is required of all Russian majors.

320. Russian Culture.
Prerequisite: Russian 310 or equivalent.
A survey of Russian culture from the beginning to the present. The course will assist students in attaining a higher degree of proficiency in all language skills, especially in the area of vocabulary building. This course is to be conducted exclusively in Russian.

399. Independent Study in Russian. 1–5 hours.
This course affords the advanced student opportunity to conduct independent study and research under the direction of individual faculty members.

401. Introduction to Modern Russian Literature.
Prerequisite: Russian 210 or equivalent.
A study of representative works in the original language. The course is conducted in Russian.

402. Introduction to Modern Russian Literature.
Prerequisite: Russian 310 or equivalent.
A study of representative works in the original language. The course is conducted in Russian.

405. Topics in Russian Literature in Translation.
This course will cover various topics in Russian literature. The class will be conducted in English, and all readings will be done in translation.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

HISTORY (HIS)

Head: McPherson. *Staff*: Alexander, Anderson, Bartley, Berrigan, Boney, Broussard, Buck, Crowe, Eubanks, Fite, Foley, Ganschow, Gasiorowski, Haag, Heggoy, Herndon, Holmes, Irwin, Jones, Kennett, Land, Langley, Leary, Mamatey, Murdoch, Piper, Rader, Sokol, Spalding, Spencer, Stephens, Thomas, Tresp, Vinson, Vipperman, Vogt, Wynes, Ziemke.

100. United States and Georgia History.
This course is designed to satisfy the Georgia state law which requires students receiving degrees from The University of Georgia to have passed an examination in American and Georgia history or have received credit in courses which satisfy the requirement. (See General Information.) Not open to students who have credit for either History 251 or 252.

111, 112. History of Western Civilization. 5 hours each.
Development of the institutions of the western world from earliest times to 1660, from 1660 to the present.

215H, 216H, 217H. Honors History of Western Civilization. 15 hours (5 hours in each of three quarters; any of the three may be taken for final credit).
Development of the institutions of the western world from earliest times to 1500, from 1500 to 1815, and since 1815. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources. Not open to students who have had credit for History 111, 112, or 113.

251, 252. American History. 10 hours (5 hours in each of two quarters; either course may be taken for final credit).
Development of the American nation from the age of discovery to 1865, and from 1865 to the present.

280H. Introduction to Asian Civilizations.
Introduction to the sources of Indian, Chinese, and Japanese tradition; provides a broad survey of the major historical developments of these nations.

300M. Junior Seminar in History: Methods, Theories of History, and Historiography.
A seminar for history students on the methods of historical research and writing as well as a brief study of the philosophy of hist)ory and historiography.

310H. Junior Honors Seminar: Theories and Intrepretations of History.
Designed to acquaint the student with history as a discipline. Deals with methods of historical research and writing, provides an introduction to the philosophy of history, to historiography and to the various schools of thought in history.

311E. Colonial and Revolutionary America.
Exploration and settlement of the English colonies in North America; development of colonial life through blending of European backgrounds and American environment.

311H. America and the World, I.
An Honors undergraduate seminar: An introduction to the principles of geopolitics, emphasizing their effects on the development of the U.S. during the formative, colonial and national periods. Topics such as national interest and security, manifest destiny, balance of power and concepts of power politics will be treated.

312H. America and the World, II.
An Honors undergraduate seminar. The U.S. as a 20th century world power: a study of contemporary American foreign policy problems in the light of the principals of geopolitics. Topics such as the transition period in foreign affairs, 1898–41. The post war II period and principles and practices in contemporary foreign affairs will be treated.

312E. From Jefferson to the Civil War.
Covers the period in American history from the election of Jefferson in 1800 to the election of Lincoln in 1860. Development of political, social, and economic factors.

315C. (REL) Religion in the United States.
A survey of the most significant developments in American religious history and thought from Puritanism to the present.

316M. A Survey of American Diplomacy.
A survey of American objectives and policies in foreign affairs from colonial times to the present.

316P. Survey of U.S. Foreign Policy, 1898–1939.
A survey of major historical events in U.S. foreign affairs from 1898 to 1939.

316S. Survey of U.S. Foreign Policy, 1939 to the Present.
A survey of major historical events in U.S. foreign affairs from the outbreak of World War II to the present.

330H. Honors Colloquium on the History of European Women.
A survey of the role of women in European history from ancient to modern times with major emphasis on culture, social and political developments.

331H. Comparative History of the Americas, 1491–1808.
A comparative survey of the social, political, and cultural development of English, Spanish, French, and Portuguese colonies in America to 1808. Topics will include, among others: The Frontier vs. the City: The Black Man in the Americas; Society, Law, Education; Imperial and Local Administration; etc. Emphasis will be placed upon readings and discussion sessions of the various topics.

332H. Comparative History of the Americas, 1808 to the present.
A comparative survey of selected topics in the development of nation states in the Western Hemisphere since 1808. Topics will include, among others: Independence; Imperialism; Race Relations; Reform and Reaction in the Americas; and Nationalism. An attempt will be made to examine as many national models as possible from English, Spanish, Portuguese, and French-derived societies.

331F, 331P. Latin American Civilization. 10 hours (5 hours each of two quarters; either course may be taken for final credit).
A survey of Latin American history and culture from preconquest period to 1800, and since 1800.

344M. Medieval Civilization.
Europe from the fall of Rome to the Renaissance: the barbarian invasions, growth of power of the Church, struggle with temporal rulers, feudalism, the Crusades, social and literary development.

350F. Renaissance and Reformation.
A study of the transition from medieval conditions with emphasis on religious upheaval of the 16th century.

353H. History of the U.S., 1500–1865.

354H. History of the U.S., 1865–Present.
Development of the American nation from the age of discovery to 1865, and from 1865 to the present. More attention will be given to cultural history and to themes which are usually treated briefly in traditional courses. Not open to students who have credit for History 251 or 252.

363F, 363P. English History. 10 hours (5 hours in each of two quarters; either course may be taken for final credit).
A survey of English history from earliest times to 1660, and since 1660.

370F. Russian History to 1856.
A survey of Russian history from early beginnings to 1856.

370P. Russian History Since 1856.
A survey of Russian history from 1856 to the present day.

377F, 377P. Survey History of East Asia I and II. 10 hours (5 hours each of two quarters; either course may be taken for final credit).
A survey of East Asian civilization from their beginnings to 1800, and since 1800.

381F, 381P. African Civilization. 10 hours (5 hours in each of two quarters; either course may be taken for final credit).
A survey of African civilization from earliest times to the present. 381F deals with North Africa, while 381P studies Africa south of the Sahara.

385H. Communist China.
Rise of Communism in Contemporary China; specific topics will include among others; Marxism and Maoism, the Chinese Civil War, the Great Leap Forward, the Great Proletarian Cultural Revolution, and China after Mao.

411F. American Colonies to 1688.
A study of the foundations of the American colonies in the 17th century. Attention is paid to the transplanting of European institutions to America and the transforming of these institutions.

411M. American Colonies, 1689–1763.
Early settlements in North America by the English, French, Spanish, and Dutch; shaping of American society by adaptation of old world forces to new world environment.

411N. Everyday Life and Customs in Colonial America.
The Atlantic frontier, the development of colonial life, and the emergence of colonial arts and customs will be emphasized. The class structure of the colonies will be analyzed.

411T. Revolution and Rise of the American Nation.
American history from 1763 to 1800: the Revolution; the Articles of Confederation; writing and adoption of the Federal Constitution; the administration of George Washington and John Adams.

412P. The Trans-Mississippi West.
American political, social, and economic institutions as they develop in the region west of the Mississippi River. The impact of the frontier upon the American people.

412T. The Ante-Bellum South.
Begins with the late colonial period, when settlers were pushing across the southern Appalachians, and continues to the secession of the South. Southern life and civilization will be studied.

413F. The Civil War Period of American History.
Civilian activities of the people; problems of the Northern and Southern governments. Emphasis on the Confederacy. Only major military campaigns will be considered.

413P. The Reconstruction Period.
The reconstruction of the South along all lines, as well as the remaking of the North. Beginnings will be found during the Civil War; the process will be continued to 1877.

414C. The South Since Reconstruction.
The South since the Reconstruction period with emphasis upon social, economic, and political developments of the region.

414F. Recent American History, 1877 to 1917.
Beginning with the presidency of Rutherford B. Hayes, this course will continue through the administration of William McKinley. Politics will be overshadowed by the social and economic picture.

414P. Recent America, 1917 to 1945.
The history of political, economic, social and cultural development during the present century.

414T. Recent American History, 1945–Present.
The growth of American society since World War II. An examination of the expansion of the economy, foreign and domestic ppolitics, and American society in the post-modern period.

415E. Constitutional History of the United States.
A study of how actual political and social conditions in American history have produced fundamental constitutional principles and practices.

415T. American Cultural History Since the Mid-Nineteenth Century.
A study of the principal developments in American philosophy, science, literature and art.

415W. Women in American History and Culture.
An introduction to the social science background of the American feminist movement. Emphasis will be placed on women in the 19th century social movements, in the drive for suffrage and liberation and in contemporary feminism.

416E. American Ideals in Foreign Policy.
An analysis of the aims, ideals, and methods that have determined American foreign policy from 1776 to the present.

416M. Problems in American Foreign Policy, 1776–1901.
A study of selected problems with emphasis on reading.

416P. Problems in American Foreign Policy, 1901–Present.
A study and critical evaluation of American foreign policy in the 20th century through selected reading, discussion, and individual research.

417M. History of Georgia.
Georgia from its first occupation by the Spaniards to the present. A comprehensive discussion of all aspects of Georgia's development.

418P. Modern Black America.
The 20th-century struggle for civil rights, black identity and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodation, integration, and separatism.

431F. The Caribbean Area.
Conquest and settlement of the islands and Caribbean periphery by the Spanish, the intrusions by the French, Dutch, and English, and the more recent developments of the 19th and 20th centuries.

431P. The Republics of Southern South America.
The history of the political, economic, social, and cultural development of Argentina, Brazil, and Chile since the struggle for independence with a brief summary of the late colonial period.

432F. Cultural History of South American Colonies.
The philosophical argument attending the conquest, the intellectual defense of the Indians, the theory of Spanish colonial government, and university life to 1825.

432P. Latin American Independence.
Intellectual preparation, colonial grievances, breakdown of government in Spain, and the strikes for independence from Mexico City to Buenos Aires.

433F. Inter-American Problems.
Economic, social and political problems of Latin America since independence; cooperative efforts of the United States in seeking solutions within the framework of the Pan-American movement and the Organization of American States.

433P. Latin America in the Twentieth Century.
Twentieth century influences that are producing socio-economic unrest in much of Latin America; efforts of the United States and private organizations to combat the spread of these conditions.

437M. Ancient Near East.
A survey of the ancient peoples and cultures of the Near East from earliest historical times through the Persian empire.

438. (GGY) Historical Geography of Eastern North America to 1783.
Evolution of settlement systems and their distributions in pre-Revolutionary North America. Comparative geography of early regions of eastern North America.

438M. Greek History.
A study of Greek history through the time of Alexander the Great.

438P. Hellenistic History.
Problems in Hellenistic History from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, or Ptolemaic dynasty.

439. (GGY) Historical Geography of Eastern North America from 1783 to 1860.
Expansion settlement systems and their distribution into the trans-Appalachian regions.

Comparative geography at mid-19th century of the regions of eastern North America.

439F. Roman Republic.
A study of Roman history to the end of the republic.

439P. Roman Empire.
History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

445F. Norman and Early Angevin England, 1066–1307.
A detailed study of English political, constitutional, legal, and feudal history from the Norman conquest to the death of Edward I.

445G. Later Medieval England, 1307–1485.
A detailed investigation of political, economic, social, and intellectual developments from the reign of Edward II through that of Richard III.

445M. Medieval Intellectual Survey.
Survey of medieval intellectual history. An examination of European intellectual development from Constantine to Dante.

445P. Medieval France, 987–1498.
An intensive study of France under the Capetian and early Valois kings. Emphasis will be placed upon political, feudal, and social history, unified by the story of the growth of the national state focused upon the king.

450M. Intellectual History of the Renaissance.
Survey of Renaissance intellectual history. An examination of European intellectual history from Dante to Erasmus.

450P. Intellectual History of Early Modern Europe.
Intellectual history of early modern Europe. An examination of intellectual developments in 16th and 17th century Europe.

450S. Intellectual History of Modern Europe, 1700 1815.
An historical study of European thought from 1700 to 1815, with emphasis on the interrelationship between political development and dominant ideas and beliefs.

450W. Intellectual History of Modern Europe, 1815–Present.
An historical study of European thought from 1815 to 1950, with emphasis upon the interrelationship between political development and dominant ideas and beliefs.

451E. History of the Reformation.
Intensive study of selected aspects of the Reformation with emphasis on the late medieval background, the theology of the major reformers, the establishment of the major denomination, the Council of Trent and modern historiography of the Reformation.

452F. The French Revolution and Napoleon.
Europe from 1789 to 1815, centering upon events in France. Stress is placed upon the political, diplomatic and military history of the era.

452P. (GER) Deutsche Geschichte Seit Der Reformation Im Uberblick.
Prerequisite: 20 hours of German above 104 or special permission of instructor.
An interpretive survey of German history since the Reformation. The German language will be used in lectures and seminar sessions.

453E. Nineteenth Century Europe.
A History of Europe from 1814 to 1914. The main political, international, social, economic, cultural, and intellectual movements will be stressed.

453F. Twentieth Century Europe.
The history of Europe from 1914 to the present. The main political, social, economic, cultural and intellectual movements will be stressed.

453M. France in the Nineteenth and Twentieth Centuries.
A survey of political, social, cultural and economic developments in France since the fall of Napoleon I.

453P. The Emergence of Modern Germany, 1800–1914.
A survey of political, social, and cultural developments in 19th century Germany (1800–1914). Domestic events will be stressed.

454F. Spain: 1500 to the Present.
A survey of political, social and economic development of Spain and Portugal from 1500 to the present, with emphasis on the period since World War I and on contemporary colonial problems.

454P. Portugal: Age of Exploration.
A survey of political, social, and cultural development of Spain and Portugal from crusades against Moors to the end of the Hapsburg dynasty, including colonial expansion into North Africa.

457A. Military History to 1815.
A history of warfare in ancient, medieval and early modern times. Its techniques, theory and role in the evolution of western society.

457B. Recent Military History.
The history of warfare and the development of weapons, techniques, and military thought in the 19th and 20th centuries.

457E. The Age of World War I.
The origins of modern world politics, culminating in World War I and the peace settlement of 1918–24. The interaction between world politics and the 20th century ideologies—welfare-state, democracy, fascism, and communism—and the intellectual and technological roots of these ideologies.

457F. The Age of World War II.
A continuation of History 457E. The interwar period, the war, and its consequences with emphasis on Europe.

457M. Germany Under the Weimar Republic to the Present.
A survey of political and social developments since 1918. Emphasis will be given to the breakdown of the Weimar Republic and the rise and structure of Naziism.

457T. The Age of the Cold War.
A continuation of History 457F. The political, ideological, and military conflicts and the search for a new world order in the aftermath of World War II.

464E. The Tudor Period of English History, 1485–1603.
England's emergence as a modern state. Her political, religious, economic, social, and intellectual development during the Renaissance and Reformation.

464M. The Stuart Period of English History, 1603–1714.
England during the evolution of parliamentary supremacy: problems leading to the Civil War, Interregnum, Restoration, and Revolution Settlement.

464T. Constitutional History of England.
Development of constitutional and legal institutions of England from Saxon times to the present.

465G. Modern British History, 1870–Present.
A survey of the political, economic, social and diplomatic developments in Great Britain during the period 1870–present.

465M. British Empire and Commonwealth.
A survey of the British Empire from the 15th century to 1922.

465N. Anglo-American Tradition in World Affairs.
A survey of British and American influence in the development of governmental institutions since World War I.

470P. Imperial Russia, 1725–1881.
The St. Petersburg period of Russian history to the assassination of Alexander II, and the rise of the generation which created Soviet Russia. Russian influence in world affairs will be interpreted in the light of basic changes in domestic policy after the French Revolution.

471F. Russian Revolution and Rise of Stalin, 1881–1927.
The final phase of the Russian revolutionary movement and the collapse of the empire under the impact of the wars of 1904–05 and 1914–17. The 1917 Revolutions, Bolshevik victory, and the period of the New Economic Policy.

471P. Soviet Union Since 1927.
Soviet Union from Stalin Revolution to present. Stresses domestic developments and rise of USSR to world power. Post-Stalin internal changes and polycentrism in Communist world.

472E. Poland and the Baltic Since 1697.
A survey of political, social, economic, and cultural developments in Poland since 1697 and a sketch of the evolution of Estonia, Latvia and Lithuania.

472M. Middle Danube Region Since 1648.
History of the peoples of the former Hapsburg (Austro-Hungarian) empire and its successor states (Austria, Hungary, Czechoslovakia, Yugoslavia, and Rumania) from the Peace of Westphalia (1648) to the present.

472T. The Balkans Since 1699.
Balkan states from national liberation struggle against Ottoman empire to present. Emphasizes impact of foreign powers, especially Russian, and political-social changes since independence.

478A. History of China I: The Traditional Order from Prehistory to the Sung Dynasty.
An examination of the political, economic, social and cultural life of ancient China from earliest beginnings to the Sung dynasty. Emphasis on traditional Confucianism, Taoism, and Buddhism, the primary molders of Chinese culture.

478B. History of China II: The Transitional State from the Sung Dynasty to the 1911 Revolution.
An examination of significant changes in Chinese culture, as well as an analysis of these forces within and without China that contributed to or inhibited modernization.

478C. History of China III: The Modern Transformation from the 1911 Revolution to the Present.
A study of China in the 20th century with the focus on the Republic of China, its disintegration, the rise of Communism, and the changes in the nature of the People's Republic of China.

478M. Japan to 1868.
From prehistory to the Meiji Restoration of 1868.

478P. Modern Japan.
The impact of the West on traditional Japanese institutions, with major attention to the internal history of Japan from the middle of the nineteenth century to the present.

480F. North Africa: European Penetration and the Colonial Period.
Attention centered on diplomatic problems rasied by contacts between European powers and North Africa. Colonial settlement and colonial history will be discussed.

480P. Nationalism in North Africa and the Problems of New Power.
Origins of nationalism in Morocco, Algeria, Tunisia and Libya; problems involved in gaining independence, of setting up new governments, and of independently meeting difficulties that were earlier dealt with by the colonial powers.

482F. History of West Africa.
A detailed study of the major themes in West African history from A.D. 1000.

482P. Imperialism in Africa, 1860–1919.
A study of the European penetration of Africa, the diplomacy of partition, and the African response.

488M. The Middle East in Modern Times.
Political, economic and social developments from 1800 to the present: collapse of the Ottoman empire and old Persia, nationalism and the anti-colonialist revolt, the emergency of Israel, U.S. interests and the growing Soviet presence in the area.

493M. (PHY) Philosophy of History.
An introduction to both classical and modern views on the nature of history. Consideration will be given to the analysis of the conceptual foundation of historical methods, theories of explanation, the problem of historical objectivity and the purpose of history and its relation to other disciplines.

496H, 497H, 498H. Independent Study and / or Projects.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

HONORS PROGRAM (Interdisciplinary)

ARL 211H, 212H, 213H. Special Problems Seminar in Arts & Literature 3 hours each.

SCI221H, 222H, 223H. Special Problems Seminar in Science 3 hours each.

SOS 201H, 202H, 203H. Special Problems Seminar in Social Science 3 hours each.

JAPANESE (JAP)

See Linguistics 401–404

LINGUISTICS (LIN)

Director:: Algeo. *Staff*: Appleby, Blaubergs, Crawford, de Gorog, Irwin, Klein, O'Donnell, Rystrom, Smith, Stephenson, von Glasersfeld.

320H. Introduction to Linguistics (Honors).
A survey of the field of linguistics and of linguistic theory. Students will be encouraged to conduct individual explorations into the relationship between linguistics and their major fields of interest.

400. (ENG) Old English.
The language and literature of England before the Norman conquest, with reading of selected texts.

401. (JAP) Japanese I.
Basic Japanese, with emphasis on pronunciation and the mastery of simple conversational forms and simple sentence patterns. Focus on the spoken language, with some attention to the Japanese kana phonetic syllabary.

402. (JAP) Japanese II.
Prerequisite: Japanese 401.
More complex structures; practice in conversational Japanese; practice in reading and writing, with a limited number of kanji.

403. (JAP) Japanese III.
Prerequisite: Japanese 402.
Attention to achieving familarity with a wide range of constructions and the practice in spoken Japanese; also emphasis on reading and writing.

404. (JAP) Japanese IV.
Prerequisite: Japanese 403.
Equal emphasis on fluency in spoken Japanese and reading skills.

410. (CLC) Comparative Grammar of Greek and Latin. 5 or 10 hours.
An introduction to the comparative phonologies and morphologies of Greek and Latin.

411. (ENG) Transformational Syntax.
Grammatical analysis of the English language.

413. (ENG) History of the English Language.
The development of present English through the stages of Old English, Middle English, and early Modern English. Emphasis is placed on the growth of the vocabulary and changes in pronunciation, although grammatical changes receive some attention. Elementary phonetics and phonemics are studied in connection with sound change and dialectal variations in pronunciation.

414. (PHY) Introduction to Philosophy of Language.
A critical study of topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

416. Dialectology.
The phenomena of regional and social linguistic variation among speakers of the same language are investigated, with reference to dialect studies of various aspects of several languages.

419. History of Linguistics.
The development of linguistic thought from the Hellenic period to the twentieth century.

421. Introduction to Indo-European Studies.
The history and development of the Indo-European language family: the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto language.

430. Generative Phonology.
The synchronic study of phonology in relation to syntax and the lexicon.

438. (GER) Contrastive Grammar: German/English.
Prerequisite: Two years of college German or permission of instructor.
Contrastive study of two systems of syntax and morphology. To assist future teachers of German to isolate, identify, and understand similarities as well as differences in the structure systems, and thus to teach English speakers to learn and use correct German.

444. (PHY) Symbolic Logic II.
Prerequisite: PHY 442 or 443 or consent of instructor.
Examines formal languages from the viewpoint of the decision problems. Consistency, completeness and Godel Incompleteness theorems will be proven.

446. (GER) Linguistic Structure of German.
Prerequisite: Two years of college German or permission of the instructor.
Emphasis on phonetics, phonology and intonation, with introduction to the overall structure of German. Desirable for linguistic students and undergraduate majors of German; will assist future teachers of German to understand the essential characteristics of the language.

448. (ENG) English Grammar: Phonology and Morphology.
The phonological and morphological structure of Modern English.

461. (SKT) Structure of Sanskrit I.
An introduction to the phonology, morphology, and syntax of the classical Sanskrit Language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

462. (SKT) Structure of Sanskrit II.
Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

463. (SKT) Structure of Sanskrit III.
Prerequisite: LIN 461 and LIN 462.
Introduction to the Vedic dialect of Sanskrit, emphasizing the similarities and contrasts between Vedic and the classical language. A selection of Vedic hymns will be read intensively, with attention to the nature of Vedic religion.

469. Historical Linguistics.
Traditional methods of historical linguistics are reviewed, with examples from several different language families. Various kinds of possible phonological and syntactic change are investigated in relation to modern linguistic theory.

476. Structure of Black English.
History and structure of black English: theories of its origins; comparison with other dialects of American English; identity of its speakers.

480. (ANT) Introduction to Linguistics.
An introduction to structural linguistics from the standpoint of anthropology, emphasizing elementary descriptive techniques and a consideration of the relationships among language, culture, and society.

481. (ANT) Linguistics: Phonology.
Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

482. (ANT) Linguistics: Morphology.
Grammatical analysis of phonemically transcribed data from numerous languages of the world.

483. (ANT) Types of Linguistic Structures.
A survey of diverse grammatical structures as exemplified by selected languages of the world.

485. (ANT) American Indian Languages.
The native languages of North America; classification, grammatical structures, and genetic affiliations.

488. (ANT) Linguistics: Field Methods.
The technique of recording and analyzing a foreign language by working directly with a native speaker.

489. (ANT) Linguistics: Advanced Field Methods.
The technique of recording and analyzing a foreign language by working with a native speaker. Continuation of LIN 488.

496H, 497H, 498H. Independent Study and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assisant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500. (EEN) Language Acquisition and Development.
A language oriented study of the stages a child goes through in acquiring his native language and the processes used in developing sophistication. Infant, childhood, and adolescent periods shown as a continuum in the native's linguistic development.

507. (EEN) English Language Studies for Teachers.
Language concepts are drawn from the history of English, from grammatical systems (with special emphasis on transformational-generative grammar), from theories of usage, semantics, lexicography, and dialectology. The focus of the course, however, is on the instructional uses of applications of these concepts.

528. (SP) Spanish Phonetics.
A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation.

557. (FR) French Phonetics.
Prerequisite: French 306.
A careful analysis of each of the sounds in the French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription; use of tapes.

MATHEMATICS (MAT)

Head: Cantrell. *Staff*: Adomian, Asmussen, Azoff, Ball, Bird, Bouldin, Brahana, Carlson, Clancey, Clark, Edwards, Galewski, Gard, Gootman, Gosselin, Harrison, Hollingsworth, Horne, Kannan, Lether, McCleary, Pao, Penney, Pittie, Pomerance, Rice, Saade, Shyr, Wenston, Wilhelmsen.

100. Basic Algebra.
Basic algebraic manipulations with rational expressions, and exponents; solutions of quadratic equations and systems of linear equations. Functions and graphs.

101. Trigonometry and Algebra.
Prerequisite: Mathematics 100 or permission of the department.
Analytic trigonometry and a study of the exponential and logarithmic functions. Credit for both Mathematics 101 and Mathematics 116 not allowed.

103. Fundamentals of Mathematics for Business.
Prerequisite: Score of 450 or better on the mathematics achievement test or credit for or exemption from Mathematics 100 or SAT Math score of 500 or better.
An introduction to the mathematical analysis of problems in management and economics.

105. Introduction to Mathematics.
Prerequisite: Completion of or exemption from Math 100.
A course for non-science majors designed to give the student an insight into the nature and scope of mathematics rather than to polish familiar techniques.

106. Introduction to Mathematics II.
Prerequisite: Mathematics 105.
A continuation of Mathematics 105.

115H. Freshman Honors Mathematics.
Prerequisite: Two years of high school algebra and permission of the Honors office.
Conceptual aspects of modern mathematics, non-routine problems involving mathematical reasoning, methods of stating problems in mathematical language. Intended for talented non-science majors.

116. Precalculus Mathematics.
Prerequisite: Two years of high school algebra and trigonometry or permission of the department.
For those students who intend to take calculus.

The concept of function, intensive study of polynomial, rational, exponential, logarithmic, and trigonometric functions, and applications. Credit for both Mathematics 101 and Mathematics 116 is not allowed.

204. Mathematical Analysis for Business.
Prerequisite: Mathematics 103.
A sequel to Mathematics 103, including an introduction to the calculus with applications to problems in management and economics. Not open to students with credit in Mathematics 253.

205, 206. Mathematics for Elementary Teachers.
A two quarter sequence in mathematics appropriate to the needs of the elementary school teacher.

253. Analytic Geometry and Calculus.
Prerequisite: Mathematics 116, or Mathematics 101, or permission of the department.
Introductory differential calculus and applications.

254. Calculus.
Prerequisite: Mathematics 253.
Introductory integral calculus and applications.

255. Calculus.
Prerequisite: Mathematics 254.
Multivariable calculus, introductory vector calculus, advanced analytic geometry, infinite series, applications.

256. Introductory Linear Algebra.
Prerequisite: Mathematics 254.
An elementary introduction to real vector spaces, linear transformations and matrices with emphasis on their interpretation and computational aspects.

263H. Calculus (Honors).
Prerequisite: Mathematics 116 and permission of the Honors office.
A study of differential calculus parallel to that in Mathematics 253, but with greater depth and wider range of applications.

264H. Calculus (Honors).
Prerequisite: Mathematics 263H and permission of the Honors office.
The topics of integral calculus are treated with more depth and wider range of applications than in Mathematics 254.

265H. Calculus (Honors).
Prerequisite: Mathematics 264H and permission of the Honors office.
The material covered in Mathematics 255, presented with greater depth and a wider range of applications.

358. Introduction to Differential Equations.
Prerequisite: Mathematics 254.
Linear differential equations, series solutions, systems of equations, physical applications.

401. Differential Equations.
Prerequisite: Mathematics 254.
Elementary differential equations with applications to geometry and physics. Intended for students in Agricultural Engineering.

403. Numerical Analysis I. 4 hours.
Prerequisite: Mathematics 253–255, Statistics 500, or Statistics 431; recommended corequisite: Mathematics 256.
Iterative techniques for the numerical solution of non-linear equations; polynomial interpolation; numerical integration; error analysis; digital computer problems and applications.

404. Numerical Analysis II. 4 hours.
Prerequisite: Mathematics 403; recommended corequisite: Mathematics 358.
Numerical solution of systems of linear equations, matrix inversion, eigenvalues, numerical solution of ordinary differential equations, and digital computer applications.

405. Numerical Analysis III. 4 hours.
Prerequisite: Mathematics 404.
Iterative methods for the solution of systems of non-linear equations; splines; linear and convex programming; digital computer applications.

408. Linear Optimization. 3 hours.
Prerequisite: Mathematics 256. Corequisite: A programming course.
Intended to develop understanding of mathematical foundations as well as practical working knowledge of linear optimization.

409. Nonlinear Optimization. 3 hours.
Prerequisite: Mathematics 408.
Nonlinear programming, Kuhn-Tucker Conditions, Convex Programming, Quadratic Programming, Geometric Programming. Applications from various disciplines will be interspersed throughout the development. No knowledge of computer programming needed in the course.

410, 411, 412. Advanced Calculus 3 hours each.
Prerequisite: Mathematics 255 and 256.
A thorough study of calculus of functions of several variables. Multivariable differential calculus, multiple integrals, Taylor's formula, Stokes' theorem, etc.

414, 415, 416. Introductory Topology. 3 hours each.
Prerequisite: Three senior division mathematics courses.
An introductory course in point set topology.

420, 421, 422. Partial Differential Equations and Problems of Applied Mathematics. 3 hours each.
Prerequisite: Mathematics 256, 358.
Partial differential equations, Laplace transforms, generalized series and transforms, Sturm-Liouville theory, approximation theory, calculus of variations, linear integral equations, Legendre polynomials, Bessel functions, Green's functions, boundary-value problems, and physical applications.

423. Mathematical Models in Biology I. 3 hours.
Prerequisite: Mathematics 253 and 254.
Construction, use and evaluation of mathematical models for the biological sciences. Compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models. Emphasis on construction and use of models by students in their own research.

424. Mathematical Models in Biology II. 3 hours.
Prerequisite: Mathematics 423.
A continuation of Mathematics 423, studying specific models and related mathematics more thoroughly, as determined by the interests of those enrolled. More emphasis on model use and evaluation.

431. Theory of Numbers.
Prerequisite: Mathematics 254.
An elementary course in number theory.

432. Theory of Numbers II.
Prerequisite: Mathematics 431.
A continuation of Theory of Numbers I.

440. Introduction to Higher Algebra. 3 hours.
Prerequisite: Mathematics 256.
A more sophisticated, deeper treatment of linear algebra than Mathematics 256.

441. Introduction to Higher Algebra. 3 hours.
Prerequisite: Mathematics 440 or Mathematics 431 and 256.
An introductory course in group theory. Examples of groups, permutation groups, quotient groups, homomorphism and isomorphism theorems.

442. Introduction to Higher Algebra. 3 hours.
Prerequisite: Mathematics 441.
An introductory course in ring and field theory. Examples of rings, polynomial and matrix rings, ideals, difference rings, homomorphism and isomorphism theorems, fields and field extensions.

445. Applied Linear Algebra. 3 hours.
Prerequisite: Mathematics 256.
A course treating those aspects of linear and matrix algebra found to be frequently useful in a variety of non-mathematical fields. Topics selected from: solution of systems of linear equations (direct and iterative); calculation of eigenvalues; generalized inverses; convexity; properties of non-negative matrices.

453, 454, 455. An Introduction to the Foundations of Analysis. 3 hours each.
Prerequisite: Three senior division mathematics courses.
An introductory course in functions of a real variable; elementary topology of metric spaces; continuous functions; differentiation and Riemann integration; measure theory and the Lebesque integral.

459. Vector Analysis.
Prerequisite: Mathematics 255 and 256.
Calculus of vector functions. Line and surface integrals. Green's theorem, the divergence theorem, Stokes' theorem and physical applications.

460. Advanced Differential Equations I. 3 hours.
Prerequisite: Mathematics 256 and 358.
Laplace transforms, convolution theorem, Green's functions, vibrating spring problem, series solutions, regular singular points, Bessel's equation, Hermite's equation, Euler equations.

461. Advanced Differential Equations II. 3 hours.
Prerequisite: Mathematics 460.
Systems of linear differential equations, eigenvalues, double harmonic oscillation, inductance-capacitance circuits, existence and uniqueness theorems, numerical methods, boundary value problems.

463. Elementary Differential Geometry.
Prerequisite: Mathematics 255.
An introduction to the geometry of curves and surfaces in Euclidean space. Frenet formulas for curves and Gaussian curvature of surfaces. Physical applications, non-Euclidean geometries.

465. Introduction to Complex Variables.
Prerequisite: Mathematics 255.
Introductory course in complex variable theory, with applications.

471, 472. Advanced Probability Theory I, II. 3 hours each.
Prerequisite: Mathematics 255, 256, or 358.
Concerned with absolutely continuous and continuous singular case. An introduction to Markov chains.

473. Probability III. 3 hours.
Prerequisite: Mathematics 472.
Introduction to stochastic processes and Markov chains and their applications.

496H, 497H, 498H. Independent Reading and or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

502. Basic Ideas of Arithmetic.
Prerequisite: Mathematics 100 or two years teaching experience. Cannot be used as part of the major of 40 hours.
Designed to give elementary teachers a clear understanding of the fundamental ideas of arithmetic. Operations of arithmetic will be studied in several number systems.

503. Basic Ideas of Algebra and Geometry.
Prerequisite: Mathematics 502. Cannot be used as part of the major of 40 hours.
A continuation of Mathematics 502 designed to give elementary teachers a clearer understanding of some of the important ideas of algebra and geometry.

510. Fundamental Ideas of Algebra.
Prerequisite: Mathematics 100–101 and either two mathematics courses numbered 200 or above or two years' teaching high school algebra.
A course designed to help teachers of high school algebra. It will stress those fundamental ideas, some of which are modern, which determine the structure of elementary algebra. Cannot be used as part of 40 hours in AB/BS MAT major program.

514. Elementary Set Theory for Teachers.
Prerequisite: Mathematics 254 or two years' experience as a mathematics teacher.
An elementary course in the theory of sets. Contains applications to topology. Cannot be used as part of 40 hours in AB/BS MAT major program.

516. Modern Algebra for Teachers.
Prerequisite: Mathematics 100–101 and either two mathematics courses numbered 200 or above or two years' teaching high school algebra.
An introduction to matrices, vectors and linear programming. Cannot be used as part of 40 hours in AB/BS MAT major program.

520. Foundations of Geometry 3 hours.
Prerequisite: Mathematics 100–101 or 116 or two years of teaching high school geometry.
A course in more advanced elementary geometry especially designed for prospective teachers of secondary school mathematics.

521. Advanced Topics in Geometry. 3 hours.
Prerequisite: Mathematics 520.
A continuation of Mathematics 520.

522. Transformation Geometry. 3 hours.
Prerequisite: Mathematics 520.
Transformation Geometry.

556. Fundamentals of Probability and Statistics.
Prerequisite: Two mathematics courses numbered 200 or above or two years' experience teaching high school mathematics.
Fundamental ideas of probability with particular emphasis on their applications in statistics. Cannot be used as part of 40 hours in AB/BS MAT major program.

MICROBIOLOGY (MIB)

Head: Payne. *Staff*: Baldwin, Carlton, Champney, Dawe, Dodgson, Eagon, Finnerty, Fliermans, Fitzgerald, Giddens, Gratzek, Hamdy, Hodson, Howe, Kushner, Lansman, Ljungdahl, Lukert, Meagher, Michaels, Roth, Sanders, Summers, Van Eseltine, Vapnek, Wiebe.

Students majoring in microbiology with the intention of applying for examination for admission to the National Registry of Microbiologists should consult the departmental undergraduate advisor concerning courses required for eligibility.
Those anticipating graduate studies should include calculus or statistics, quantitative, analytical and physical chemistry in their programs.

350. Introductory Microbiology. Three lectures and two double laboratory periods.
Prerequisite: 10 hours of biological science, 5 hours of physical science, organic chemistry, or concurrently.
A survey of microorganisms with special emphasis on bacteria and their relationship to man.

352. Microbiology and Disease. 3 hours. Three lectures or recitations.
Prerequisite: Microbiology 350. Specifically for pharmacy students but open to others.
Distribution and nature of specific pathogens; mechanism of transmission, pathogenesis and defense; means of control or prevention.

357. (DS) Dairy Microbiology. Three lectures and two laboratory periods.
Prerequisite: Microbiology 350.
Determination of numbers and types of bacteria, use of microorganisms in the manufacture of dairy products; study of milk fermentations and disease-producing organisms applicable to milk.

360. Introduction to Experimental Microbiology. Daily tutorial, library or laboratory work.
Prerequisite: 10 hours of microbiology.
An introduction to the microbiological research literature, laboratory methods and reporting techniques. Prearrangement with departmental advisor necessary.

399H. Microbiology's Contribution to Scientific Thought.
This course provides opportunity for Honors students to participate in a general microbiology colloquium.

400. History of Microbiology. Daily lecture or discussion periods.
Prerequisite: 10 hours of microbiology.
Examination of the development of the science of microbiology with particular reference to contributions of scientists in microbiology and allied fields to intellectual thought and development. Significant literature of past and present is reviewed and discussed.

407. (FS) Microbiology of Foods. Two lectures and three 2-hour laboratories.
Prerequisite: Microbiology 350.
Microorganisms in natural and processed foods; their origin, nature, and effects on foods; enumeration; relationships to health.

409. Fundamentals of Microbiology. Five lectures or recitations.
Prerequisite: Microbiology 350.
Fundamental principles and techniques of general microbiology. Attention will be given to growth, nutrition, inheritance, ultrastructure and physiology of representative types of microorganisms.

410. Immunology. Three lectures and two double laboratory periods.
Prerequisite: Chemistry 241 or 341, Biochemistry 310, or equivalent.
A detailed study of the structure and biology of antigens, immunoglobulins, and complement, and methods for their detection. Immunization and its consequences, cells and tissues involved in the immune response, and immediate and delayed hypersensitivity are discussed in depth.

414. Advanced Laboratory Methods in Microbiology. Five double laboratory periods.
Prerequisite: Microbiology 350, MIB 409 recommended.
Instruction in the design and execution of experiments will be provided to acquaint the student with experimental techniques necessary for basic studies on bacteria. Attention will be given to elective culture techniques, growth and enumeration of bacteria, bioassay techniques, effects of irradiation and of chemical mutagens, selection of mutants, isolation of DNA, and enzymatic assay techniques.

421. (FS) Environmental Microbiology. Two lectures and three 2-hour laboratories.
Prerequisite: Microbiology 350.
The role of environment on organisms; agents to retard, inhibit, or stimulate bacteria and their mode of action; dynamics of physiological and chemical factors affecting bacteria and their resistance to antimicrobial agents; isolation of anaerobes and factors affecting sporogenesis, dormancy, spore germination and differentiation.

422. Pathogenic Bacteriology. Three lectures and two double laboratory periods.
Prerequisite: Microbiology 409 or 414.
Studies on the morphological, cultural and physiological properties of the important pathogenic bacteria and their relation to health and disease.

450. Virology. Four lectures.
Prerequisite: Biochemistry 310, Microbiology 409 or 414.
An introduction to the viruses, chlamydiae and rickettsiae. Emphasis is on laboratory methodology, genetics and physiology of viral reproduction, and viral-induced malignancy.

452. (DS) Microbiology for Sanitarians. Three lectures and two 2-hour laboratory periods.
Prerequisite: Microbiology 350.
Study of microorganisms in fluid milk and milk products, their relation to spoilage and epidemiology. Inspection and enforcement procedures.

453. (DS) Microbiology of Cheese and Fermented Dairy Foods. Three lectures and two 2-hour laboratory periods.
Prerequisite: Microbiology 350.
Study of microorganisms utilized in manufacture of cheese, cultured milks, sour cream, and other dairy products. Defects caused by microorganisms and bacteriophages. Flavor development.

459. (EHS) Microbiology of Water and Wastewater. Three lectures and two 2-hour laboratory periods.
Prerequisite: CHM 240,340 or 261; MIB 350.
In depth study of microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated along with proper storage of samples. Study will be made on effects of different types of waste on microbial population of rivers and streams.

461. (AGY) Soil Microbiology. Three lectures and two double laboratory periods.
Prerequisite: Microbiology 350 or equivalent.
Study of characteristics and activities of microorganisms inhabiting the soil.

462. Microbial Ecology. Three lectures or recitations and two triple laboratory periods.
Prerequisite: Microbiology 350 or consent of instructor.
Emphasizes the roles of microorganisms in ecosystems. Attention is given to the examination of nutrient cycles, methods of microbial analysis and the functional roles of microorganisms.

470. Medical Mycology. Two lectures or recitations and three double laboratory periods.
Prerequisite: MIB 350 or equivalent.
A study of the genetics of microorganisms, including fungi, bacteria and bacteriophage. The use of microorganisms as model systems for genetic analysis, as well as their important contributions to the field of genetics will be discussed.

480. Microbial Genetics. Five lectures or recitations.
Prerequisite: BIO 320 or equivalent.
A study of the genetics of microorganisms including bacteria, bacteriophage, and fungi. Topics covered will include genetic transfer mechanisms, chromosome mapping, mechanisms of recombination, mutant analysis, the genetic code, population genetics, plasmids, lysogeny, gene regulation, genetic systems in fungi, complementation, and genetic fine structure analysis.

496H, 497H, 498H. Independent Reading and / or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

MUSIC (MUS)

Head: Ledet. *Staff*: Amaya, Arant, Bennett, Bowers, Burton, Corina, Corma, Dancz, Deans, Dobbs, Douglas, Eicher, Ennulat, Gerschefski (Professor Emeritus), Gotko, Graham, Hair, Harriman, Hasbrouck, Howell, Jahn, Jameson, John, Jones, Karlas, Kim, Leglar, Leonard, Ligotti, Lowe, D., Lowe, J., Mitchell, Moore, Parker, Persons, Pinkow, D., Pinkow, L., Placek, Randolph, Reinke, Simons, Stewart, Strahl, Suchor, Sutherland, Teske, Thompson, Tindall, Vogel, L., Vogel, R., Vorg, Wallace, Waln, Weaver, D., Weaver, T., Youens.

Theoretical Courses

110. Theory: Fundamentals of Music 3 hours.
Fundamentals of music; introduction to harmony and ear training. Two ear training labs, three classes. Non-music majors must have permission of the music theory committee.

111. Theory: Introduction to Harmony 3 hours.
Prerequisite: Music 110.
Elementary ear training; melodic and rhythmic materials. Five classes.

112. Elementary Harmony: Sight-Singing, and Dictation. 3 hours.
Prerequisite: Music 111.
Elementary harmony. One keyboard lab, one ear training lab in harmonic materials, three classes.

234. Harmony, Sight-Singing and Dictation. 3 hours.
Prerequisite: Music 112.
Advanced ear training; melodic and rhythmic materials. Five classes.

235. Harmony, Sight-Singing and Dictation. 3 hours.
Prerequisite: Music 234.
Advanced harmony. One keyboard lab, one ear training lab in harmonic materials, three classes.

236. Harmony, Sight-Singing and Dictation. 3 hours.
Prerequisite: Music 235.
Contemporary materials and techniques of musical composition. One ear training lab in contemporary materials, one composition seminar, three classes.

310. Introduction to Counterpoint. 3 hours.
Prerequisite: Music 236.
Species counterpoint. Introduction to contrapuntal techniques. Some practice writing.

324. Instrumentation. 2 hours.
Prerequisite: Music 236.
Transposition, characteristics and range of the instruments of the orchestra and band. Scoring for miscellaneous small ensembles of these instruments.

325. Orchestral Arranging. 2 hours.
Prerequisite: Music 324.
Arranging for the symphony orchestra.

326. Band Arranging. 2 hours.
Prerequisite: Music 324.
Arranging for concert band.

327. Vocal Arranging. 2 hours.
Prerequisite: Music 324.
Arranging for voices and accompanying instruments.

470. Form and Analysis.
Prerequisite: Music 236.
Harmonic and polyphonic forms analyzed. Special stress given sonata form and Bach's "Well-Tempered Clavier." Students encouraged to write originally in forms thus analyzed.

471. Sixteenth Century Counterpoint.
Prerequisite: Music 236.
The contrapuntal style and techniques of the 16th century, acquaintance with species counterpoint.

475. Eighteenth Century Counterpoint.
Prerequisite: Music 470.
Late Baroque contrapuntal techniques and styles.

479. Introduction to Electronic Music. 3 hours.
An introductory course in electronic music systems, composition, and literature.

510. Advanced Theory. 3 hours.
Prerequisite: Music 236.
A survey of harmonic and contrapuntal resources, with emphasis upon aural and visual analysis.

Music History and Literature

122. Introduction to Music Literature. 2 hours.
An introductory survey of the music in the standard repertory of today.

223. History of Music.
Prerequisite: Music 122.
The historical development of music from its origin through the Baroque period.

224. History of Music.
Prerequisite: Music 122.
The historical development of music from the classical period to the present.

300. Appreciation of Music.
A study of masterpieces of music literature, with particular reference to those being performed on campus during the current quarter. May be used instead of Fine Arts 300 to meet the fine arts requirement. No credit allowed for Music 300 when credit is already shown for Music 359H, 343, or Fine Arts 300.

343. Listener's History of Music. 3 hours.
A study of many of the masterpieces of music since the time of Bach; an introduction to music literature.

359H. History and Analysis of Musical Style.
A study of the history and development of music with particular emphasis upon the relationship of music to the important movements in Western civilization. Not open to students with credit in Music 300, 343, or Fine Arts 300.

420. Ancient and Medieval Music.
Prerequisite: Music 223 and 224.
A survey of music from the birth of Christianity to ca. 1400, with an introduction to the place of music in Greek and Roman societies. Offered alternate years.

421. Music in the Renaissance Period.
Prerequisite: Music 223 and 224.
A music history and literature course covering the Renaissance period, 1400–1600. Offered alternate years.

422. Music in the Baroque Period.
Prerequisite: Music 223 and 224.
A study of musical styles and forms from Monteverdi through Bach and Handel. Offered alternate years.

423. Music in the Classic Period.
Prerequisite: Music 223 and 224.
A study of chamber, orchestral, keyboard, and operatic works from the middle and late 18th century. Offered alternate years.

424. Music in the Romantic Period.
Prerequisite: Music 223 and 224.
An intensive study of the Romantic period; emphasis on the development of the song, symphony, chamber music, and opera. Offered alternate years.

430. Keyboard Literature. 3 hours.
Prerequisite: Music 223 and 224.
A survey of music composed for harpsichord and piano from the Renaissance period to the present day.

431. Song Literature. 3 hours.
Prerequisite: Music 223 and 224.
An introduction to the major styles of song composition from the time of the Troubadours to the present.

432. String Literature. 3 hours.
Prerequisite: Music 223 and 224.
The study of string music from the Italian Baroque to present day.

436. Development of the Opera. 3 hours.
Prerequisite: Music 223 and 224.
The study of representative operas from the Baroque era to the 20th century.

437. Organ Literature. 3 hours.
A survey of the development of organ music in relation to the development of the instrument itself.

438. Seminar in Sacred Music Literature.
Prerequisite: Music 223, 224.
Historical development of the large forms of sacred music: the oratorio, the cantata, the passion.

440. Non-Western Music. 3 hours.
Prerequisite: Music 223 and 224.
An introduction to the music of non-European cultures, including those of the Far East, Near East, and Africa.

441. Bibliography.
Prerequisite: Music 223 and 224.
An introduction to the existing body of material, including music and books on music, which serves as the basis for musical research, and to the procedures and techniques used in research.

455. Advanced Music History.
Prerequisite: Music 223 and 224.
Special studies in history and literature of music.

458. Wind Instrument Literature. 3 hours.
A survey of the solo, sonata, and ensemble music composed for wind instruments, from the Baroque period to the present.

462. Modern Music.
Prerequisite: Music 223 and 224.
A literature course illustrating modern trends in music from Schoenberg, Stravinsky, Hindemith, Bartok, and others.

496H, 497H, 498H. Independent Reading and/or Projects.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500. Thesis. 2 hours.
Prerequisite: Music 441.

Music Education

201. Introduction to Music Education. 1 hour.
Introduction to the professional responsibilities of the music educator.

240. Guitar Class. 1–2 hours.
Basic principles and methods of guitar performance and pedagogy.

241. String Class. 1–4 hours.
Basic principles and methods of string instruments performance and pedagogy.

242. Woodwind Class (Flute, Oboe, Clarinet, Bassoon, Saxophone). 1–4 hours.
Basic principles and methods of woodwind instrument performance and pedagogy.

243. Brass Class (Trumpet, French Horn, Trombone/Baritone, Tuba). 1–4 hours.
Basic principles and methods of brass instrument performance and pedagogy.

244. Percussion Class. 1–2 hours.
Basic principles and methods of percussion instrument performance and pedagogy.

245ABCDEFGJK. Voice Class. 1 hour each.
Basic principles and methods of voice production and their application to glee clubs and choruses.

246ABCDEFGJK. Piano Class. 1–9 hours (1 per quarter).
A sequence for music majors using the piano as a secondary instrument to develop expressive performance through conceptual analysis and pianistic skills.

247. Private Applied Teaching. 1–3 hours (1 per quarter).
Prerequisite: Music 110, 122.
Methods of teaching elementary and intermediate level students individually by voice and instrument majors under faculty supervision.

248. Class Applied Teaching. 1–3 hours (1 per quarter).
Prerequisite: Music 110, 122.
Methods of teaching elementary and intermediate level students in class approaches to piano and other selected areas by music majors under faculty supervision.

303. Music Skills and Fundamentals for Elementary School Teachers. 3 hours.
For education majors only. Introduction to the basic skills and fundamentals of music for the elementary classroom teacher. Meets five times a week.

304. Music Methods and Materials for Elementary School Teachers. 3 hours.
Prerequisite: Music 303.
For education majors only. Study of music teaching methods and techniques and materials for the elementary classroom teacher.

305. Music Methods and Materials for Early Childhood Teachers. 3 hours.
Prerequisite: Music 303.
Study of music teaching techniques/methods and materials for the early childhood teacher.

306. Music Methods and Materials for Middle School Teachers. 3 hours.
Prerequisite: Music 303.
Study of music teaching techniques/methods and materials for the middle school teacher.

312. Music for Elementary Grades.
Prerequisite: Music 236, admission to teacher education, and five hours educational psychology.
Methods for music majors.

313. Music in Junior and Senior High Schools.
Prerequisite: Music 236, admission to teacher education, and five hours educational psychology.
Methods for music majors.

361. Elementary Conducting. 2 hours.
Prerequisite: Music 223, 224, 236.
Basic principles, techniques, and methods of conducting and interpretation.

362. Choral Conducting. 2 hours.
Prerequisite: Music 361.
Rehearsal, interpretive, conducting techniques, and methods for choral organizations.

363. Band Conducting. 2 hours.
Prerequisite: Music 361.
Rehearsal, interpretive, conducting techniques, and methods for band organizations.

364. Orchestral Conducting. 2 hours.
Prerequisite: Music 361.
Rehearsal, interpretive, conducting techniques, and methods for orchestral organizations.

512. Advanced Techniques for Teaching Music in the Elementary School. 3 hours.
Prerequisite: Music 312.
Course includes: (1) formulation of behavioral objectives for elementary school music; (2) new materials and methods for teaching elementary music; (3) the conceptual structure of music as it relates to the activities of the elementary music class; (4) problems of supervision; (5) and evaluation of student progress.

514. Workshop for Teachers in Music Education.
Prerequisite: Music 304 or equivalent.
Advanced study of techniques, methods, and materials for the elementary school music program.

524. Musical Productions for the Public Schools.
Techniques and methods for directing and producing musical comedy, operetta, and light opera in the public schools. Includes a survey of available materials for elementary, middle, and high school levels.

526. Marching Band Techniques and Methods. 3 hours.
Methods and techniques for organizing and training marching bands. Planning music, drills, formations, and shows.

530. General Music in the Secondary School. 3 hours.
Prerequisite: Music 313.
Study of structure and content of general music in the secondary school with emphasis on teaching methods, materials, and techniques.

531. Problems in Vocal Music Education. 3 hours.
Prerequisite: Music 312 and 313.
Detailed study of voice problems and methods to be used from classroom point of view beginning in elementary and continuing through secondary school; technique used in choral ensembles; evaluation of present concepts and practices.

532. Problems in Instrumental Music Education. 3 hours.
Prerequisite: Music 312 and 313.
Study of methods and techniques used for development of the instrumental music program beginning in elementary and continuing through secondary school; diagnosis of problems relating to strings, woodwinds, brasses, percussion.

533. Music Administration and Curriculum. 3 hours.
Prerequisite: Undergraduate requirements in education, Music 312 and 313.
Development of music curriculum as part of general education planning; evaluation of school curricula and how music can become a functional part; problems in music administration.

534. Choral Music Materials. 3 hours.
Prerequisite: Music 312 and 313.
Study and evaluation of music literature available for use in public school at all levels of instruction; research in various mediums and

schools of composition which can be adapted for school use.

535. Instrumental Music Materials. 3 hours.
Prerequisite: Music 312 and 313.
Evaluation of materials available at all levels of instruction for band, orchestra and chamber music; research in materials of various mediums and schools of composition which can be adapted for school use.

538. Advanced Conducting. 3 hours.
Prerequisite: Music 362, 363, or 364.
An intensive study of choral and instrumental conducting methods and techniques and their application in laboratory sessions.

539. Repair, Care, and Acoustics of Instruments. 2 hours.
A practical study of the proper repair and care of musical instruments in conjunction with the acoustical properties of each instrument. Supervised workshop in basic repairs common to the school situation.

547. Music for Exceptional Children.
This course is designed to prepare teachers of exceptional children to teach music in special classrooms or in settings where exceptional children are integrated into the regular music classes.

551. Instrumental Techniques. 2–6 hours.
An advanced study of the performance and teaching methods and techniques of wind, string and percussion instruments.

562. Jazz Piano Improvisation Class. 3 hours.
Application of skills and techniques in keyboard jazz playing based upon a knowledge of modern-popular harmonic and notational practices.

Music Therapy

540. Principles of Music Therapy I. 3 hours.
A study of music as human behavior, and its use with the handicapped and those suffering behavioral disorders.

541. Principles of Music Therapy II. 3 hours.
Prerequisite: music 540.
A study of the functions of the music therapist with emphasis on the use of music in a therapeutic environment.

542. Psychological Foundations of Music I. 3 hours.
A study of the acoustical and psychological aspects of music with emphasis upon problems of perception, experimental aesthetics, musical function, measurement and diagnosis of musical ability. The related literature of experimental investigation will be reviewed.

543. Psychological Foundations of Music II. 3 hours.
Prerequisite: Music 542.
A laboratory and research course emphasizing acoustical and psychological aspects of music perception, experimental aesthetics, musical function, and measurement and diagnosis of musical ability.

544. The Influence of Music on Behavior.
Prerequisite: Biology 101, 102; Psychology 423; Human Anatomy 212.
A study of the various physiological effects of music. The place of functional music in music education. Investigation of effective media and musical patterns. The relation of music to health. Music in industry.

545. Clinical Experience. 3 hours.
Prerequisite: Completion of junior year in Bachelor of Music with major in music therapy.
Three months work as a general aide in an approved psychiatric hospital for practical clinical experience.

546. Music in Recreation. 3 hours.
Experiences in elementary and secondary methods of teaching music from the perspectives of social and recreational instruments.

Applied Music

The following courses are offered primarily for music majors, but a limited number of nonmajors may be accepted when schedules permit. All music students should expect to participate in weekly seminars in their major performance media, and to attend student recitals and music appreciation programs as scheduled. Before registering for an applied music course, a student must pass a qualifying audition on his instrument or voice.

181ABC. Applied Music. 1hour (3 hours per year).
One 25-minute private lesson a week for three quarters.

182ABC. Applied Music. 2 hours (6 hours per year).
Two 25-minute private lessons a week for three quarters.

183ABC. Applied Music. 3 hours (9 hours per year).
Two 25-minute private lessons a week for three quarters.

184ABC. Applied Music. 4 hours (12 hours per year).
Two 25-minute private lessons a week for three quarters.

281ABC. Applied Music. 1 hour (3 hours per year).
Prerequisite: Music 181.
One 25-minute private lesson a week for three quarters.

282ABC. Applied Music. 2 hours (6 hours per year).
Prerequisite: Music 182.
Two 25-minute private lessons a week for three quarters.

283ABC. Applied Music. 3 hours (9 hours per year).
Prerequisite: Music 183.
Two 25-minute private lessons a week for three quarters.

284ABC. Applied Music. 4 hours (12 hours per year).
Prerequisite: Music 284.
Two 25-minute private lessons a week for three quarters, with junior recital for voice and composition majors in third quarter.

381ABC. Applied Music. 1 hour (3 hours per year).
Prerequisite: Music 281.
One 25-minute private lesson a week for three quarters.

382ABC. Applied Music. 2 hours (6 hours per year).
Prerequisite: Music 282.
Two 25-minute private lessons a week for three quarters.

383ABC. Applied Music. 3 hours (9 hours per year).
Prerequisite: Music 283.
Two 25-minute private lessons a week for three quarters.

384ABC. Applied Music. 4 hours (12 hours per year).
Prerequisite: Music 284.
Two 25-minute private lessons a week for three quarters, with junior recital for performance majors and senior recital for voice and composition majors in third quarter.

481ABC. Applied Music. 1 hour (3 hours per year).
Prerequisite: Music 381.
One 25-minute private lesson a week for three quarters.

482ABC. Applied Music. 2 hours (4 or 6 hours per year).
Prerequisite: Music 382.
Two 25-minute private lessons a week for three quarters for A.B. students; two 25-minute private lessons a week for two quarters for B.M. in music education students with senior recital in the second quarter; two 25-minute private lessons a week for three quarters for B.M. in music therapy students with senior recital in the third quarter.

483ABC. Applied Music. 3 hours (9 hours per year).
Prerequisite: Music 383.
Two 25-minute lessons a week for three quarters, with senior recital for B.F.A. students in third quarter.

484ABC. Applied Music. 4 hours (12 hours per year).
Prerequisite: Music 384.
Two 25-minute private lessons a week for three quarters, with senior recital in third quarter.

Performing Organizations and Ensembles

A maximum of six hours in performing organizations is allowed toward graduation for majors.

288. Men's Glee Club. 1 hour.
Concentration on choral literature for men's voices from all periods of music history, including sacred, secular, and folk music.

289. Women's Glee Club. 1 hour.
Concentration on choral literature for women's voices from all periods of music history, including sacred, secular, and folk music. Primarily for freshman and sophomore women.

290. University Varsity Band. 1 hour.
A concert band open to all students who have had previous experience in instrumental music.

291. (A–strings, B–piano, C–brasses, D–woodwinds, E–percussion, F–opera workshop). Chamber Music Ensemble. 1 hour per quarter.
Open to freshman and sophomore students who can qualify.

387. University Civic Symphony Orchestra. 1 hour.
Open to students who can qualify. Three hours per week.

388. University Chorus. 1 hour.
Open primarily to juniors and seniors. Three hours per week.

389. Georgia Singers. 1 hour.
Open to students who can qualify, excluding freshmen. Four hours per week for two years.

390. University Band. 1 hour.
Open to students who can qualify. Four hours per week for two years.

491. (A–strings, B–piano, C–brasses, D–woodwinds, E–percussion, F–opera workshop). Chamber Music Ensemble. 1 hour per quarter.
Open to juniors and seniors.

492ABCDEF. Advanced Accompanying. 1 hour. Maximum 6 hours.
Practical experience in chamber music and accompanying. Permission of the Instructor.

590. Symphonic Wind Ensemble. 1hour. Admission by audition.
Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores, including a substantial emphasis on contemporary music. Professional level experience.

591. Collegium Musicum. 1–3 hours (1 hour per quarter).
A study of the interrelationship of music history, theory, and performance.

PHILOSOPHY AND RELIGION

Head: Clarke. *Staff in Philosophy*: Blackstone, Burton, Dauenhauer, Granrose, Harrison, Kleiner, Nemetz, Nute, O'Briant, Richards, Severens. *Staff in Religion*: Ayers, Howard, Power, Ratnayaka.

A major in philosophy ordinarily consists of 30 quarter-hours in philosophy and an additional 10 quarter-hours in philosophy or cognate areas such as religion, history, and psychology. Assuming PHY 104 is taken as part of the philosophy, religion, and fine arts requirement and PHY 258 is taken as part of the mathematics requirement for the B.A. degree, the initial 30 quarter-hours in philosophy would include PHY 305, 420, 422 or 450, and 460 or 461. Alternative programs of study are available.

A major in religion ordinarily consists of 20 quarter-hours in religion and an additional 20 quarter-hours in religion or cognate areas such as philosophy and history. REL 115 is recommended as part of the philosophy, religion, and fine arts requirement for the B.A. degree.

All these programs of study are subject to approval by a major advisor. Students are urged to request an advisor as soon as they decide upon their major.

Philosophy (PHY)

104. Introduction to Philosophy.
A critical exploration of such topics as knowledge and belief, God and the problem of evil, freedom and determinism, the right and the good, language and meaning, mind and body, appearance and reality, and man and the world.

215H. The Fundamental Questions of Philosophy (Honors).
A study of the fundamental questions of philosophy and the answers given to those questions by the major schools of philosophical thought. Not open to any student having credit for Philosophy 104.

258. Introduction to Deductive Logic.
A study of the methods and principles used to distinguish correct from incorrect deductive arguments, with emphasis upon contemporary techniques of analysis.

305. Introduction to Ethics.
A study of the major philosophical positions concerning right and wrong, ethical values, and moral responsibility. The relevance of moral philosophy to current issues of personal and social ethics will be discussed.

315H. Introduction to Ethics (Honors).
Honors equivalent of Philosophy 305.

368H. Introduction to Deductive Logic (Honors).
Honors equivalent to Philosophy 258.

402. Existentialism.
An examination of the sources of European existentialism in Husserl, Nietzsche and Kierkegaard followed by a critical consideration of representative works of such contemporary figures as Heidegger, Jaspers, Sartre, Marcel, Merleau-Ponty, and Buber

404. Classical American Philosophers.
Prerequisite: At least one course in philosophy other than 258.
A study of the major writings of C.S. Pierce, William James, and John Dewey and their influence on the development of contemporary philosophy.

405. Ethical Theory.
Prerequisite: Philosophy 305, two other courses in philosophy, or consent of instructor.
A study of the nature and justification of fundamental ethical concepts and moral principles.

406. Social and Political Philosophy.
Prerequisite: At least one course in philosophy other than 258.
Survey of such topics as the nature and function of society and the state, human freedom and rights, the bases of social and political obligations.

408 (REL). Philosophy of Religion.
A critical study concerning the meaning, nature and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

411 (ART). Aesthetics.
A critical survey of philosophical theories about the arts (for example, painting, literature, and music). Attention will be given to such topics as the function of art in society and the problem of justifying aesthetic judgments.

414 (LIN). Introduction of Philosophy of Language.
A critical study of topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

416. Philosophy of Law.
Prerequisite: 10 hours of philosophy, political science or law.
A study of the nature and function of law with emphasis on the interpretation and application of the law in the judicial process. Readings in classical and contemporary schools of the philosophy of law.

420. History of Philosophy, Ancient.
Prerequisite: Philosophy 104 or consent of instructor.
A course in the primary works of the great ancient philosophers, especially the writings of Plato and Aristotle.

421. History of Philosophy, Medieval.
Prerequisite: Philosophy 104 or consent of instructor.
Selected readings in the works of the great medieval philosophers, especially St. Thomas Aquinas and St. Augustine.

422. History of Philosophy, Modern.
Prerequisite: Philosophy 104 or consent of instructor.
Traces the development of British and European philosophy up to the mid-19th century.

432. Philosophy of Literature.
Prerequisite: At least one course in philosophy other than 258 or at least one course in English or foreign literature at the 200 level or above.
A study of philosophic questions reflected in world literature, with attention to the nature, functions, and epistemic principles of the literary arts.

442. Set Theory and Logic.
Prerequisite: PHY 258 or 10 hours of mathematics beyond Math 100 or consent of instructor.
An introduction to the basic concepts of set theory, emphasizing the impact of the paradoxes and the infinite, Russell's paradox, and applications of set theory to the foundations of mathematics.

443. Symbolic Logic I.
Prerequisite: PHY 258 or consent of instructor.
A development of symbolic-mathematical logic, examining the propositional and predicate calculi with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

444. (LIN) Symbolic Logic II.
Prerequisite: PHY 442 or 443 or consent of instructor.
Examines formal languages from the viewpoint of the decision problems. Consistency, completeness and Godel Incompleteness theorems will be proven.

450. Contemporary Philosophy.
Prerequisite: At least one course in philosophy other than 258.
Readings in philosophers of the 19th and 20th centuries such as Nietzsche, Mill, Marx, Spencer, Bergson, James, Royce, Dewey, Whitehead, and Santayana. The topics are left flexible to allow for the divergent interest and needs of students and to permit consideration of significant current material.

457, 458. History of Natural Science I, II.
Prerequisite: 10 hours of science.
An examination of major physical, biological, and cosmological theories and their philosophic import, 600 B.C. to the present.

459. Philosophy of Natural Science.
Prerequisite: PHY 104 or 258 or permission of instructor.
The investigation of such topics as the logical structure of scientific hypothesis and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

460. Metaphysics.
Prerequisite: At least one course in philosophy.
The problems of metaphysics and their relation to other areas of philosophy.

461. Epistemology.
Prerequisite: At least one course in philosophy.

The problems of epistemology and their relation to other areas of philosophy.

471. Philosophy of Social Science.
Prerequisite: Permission of instructor.
A study of the methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanations, with special reference to the social sciences.

474. (PSY) Philosophy of Mind.
A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psycho-analytic, the phenomenological, with particular attention to such problematic areas as the nature and validation of psychological concepts, law, and theories, and knowledge of other minds.

490. Problems in Philosophy. 5–15 hours.
Prerequisite: PHY 104, 258 and 305 and permission of instructor.
Investigation of a philosophical problem or group of related problems with emphasis upon extensive reading in primary sources. Selection of topic(s) will vary with instructor and interests of students.

493M. (HIS) Philosophy of History.
An introduction to both classical and modern views on the nature of history. Consideration will also be given to the analysis of the conceptual foundations of historical methods, theories or explanation, the problem of historical objectivity, and the purpose of history and its relation to other disciplines.

496H, 497H, 498H. Independent Readings and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis. This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

Religion (REL)

115. Introduction to Religion.
A study of the nature of religion and its function in Western culture. The Judeo-Christian tradition is investigated historically and analytically.

225H. Introduction to Religion (Honors).
A study of the nature of religion and its function in Western culture. The Judeo-Christian tradition is investigated historically and analytically.

315C. (HIS) Religion in the U.S.

341. The Origin and Development of Christianity to A.D. 1500.
Historical and social background of the rise of Christianity: a study of the interrelation between Christianity and western civilization during the early and medieval periods.

350. Christianity During the Reformation and Modern Periods.
A socio-historical presentation of the development of Christianity in the reformation and modern periods in Europe; Christianity's relation to the growth of Western civilization.

400. History of Religion.
A survey of the nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

401. Religion in Asian Cultures.
Prerequisite: Senior divison standing or consent of the instructor.
The interrelation between religion and culture in contemporary and classical Asia. The course will focus on religion's role histroically as a major force in shaping the cultures of South and Southeast Asia, China, and Japan, and on significant contemporary trends reflecting particularly the effects of secularism, war, rising nationalism, Western science, and communism.

404. The Buddhist Tradition.
Prerequisite: Senior divison standing or consent of the instructor.
The development of Buddhism from its origins in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in Asia up to the present.

408. (PHY) Philosophy of Religion.

409. Indian Philosophy and Religion.
Traces the path of India's religious and philosophical thought from the Indus civilization to the present. Attention will be given to interpreting the orthodox Hindu systems as well as Buddhism and their related religous practices, ethics, castes, and sects.

410. Old Testament Literature.
A study of the nature, content, and problems of Old Testament literature, with attention given to historical data, literary forms, and outstanding personalities.

411. New Testament Literature.
A study of the nature, content, and problems of New Testament literature, with particular attention to (1) the political, social, and religious background of Judaism, out of which Christi-

anity sprang; (2) the life of Jesus; (3) the immediate foreground of an expanding church.

412. The New Testament World.
Prerequisite: Ten hours of history and/or literature.
A study of the political, social, and religious influence on the New Testament writings. Special attention is given to intertestamental Judaism and Hellenistic and Roman religion as background to New Testament Christianity.

420. Constructive Theology.
An examination of the aims, methods, and content of theology as related to the monotheistic religions of mankind.

421. Contemporary Theology.
Prerequisite: Religion 115 or consent of instructor.
An examination of the theories of contemporary theologians concerning such problems as religious language, God, cosmology, human history, revelation, faith, and eschatology. Writings from contemporary theologians of the monotheistic religions will be investigated.

422. Theology and Culture.
Prerequisite: REL 115 or consent of instructor.
An examination of the relation of theology to philosophy, science, technology, and the arts, with special attention on the theological attempts to deal with the impact of science and technology upon culture.

430. Personalities of the Old Testament.
A study of the development of Hebrew religion from its early, more primitive stages to the high point attained in the social, ethical, and spiritual teaching of the great writing prophets of Israel.

440. The Teachings of Jesus.
Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

450. Judaism.
A study of Judaism from the post-Biblical period to the present. Emphasis will be given to the history and literature of the formative years.

460. Life and Letters of Paul.
An historical-exegetical study of the life and letters of Paul, the relation between Acts and the Pauline epistles, early non-Pauline Gentile Christianity, Pauline theology and its lasting impression on Christianity.

490. Topics and Problems. 5–15 hours.
Prerequisite: Ten hours in religion beyond REL 115.
An investigation of problems and topics in religion with emphasis upon extensive reading i primary sources and individual and/or group r search projects. Selection of topics will vary wit instructor and interests of students. Five to fi teen hours credit.

496H, 497H, 498H. Independent Readings and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

Hebrew (HBW)

201. Introduction to Classical Hebrew I.
A study of the elements of classical Hebrew grammar.

202. Introduction to Classical Hebrew II.
Prerequisite: Hebrew 201.
A continuation of 201.

203. Intermediate Hebrew I.
Prerequisite: Hebrew 202.
A review of classical Hebrew grammar with reading of selected texts from the Hebrew Bible.

204. Intermediate Hebrew II.
Prerequisite: Hebrew 203.
Readings of Hebrew texts selected from the Old Testament, Dead Sea Scrolls, or early rabbinic literature.

496H, 497H, 498H. Independent Readings and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

Aramaic/Syriac (ARA)

402. Introduction to Aramaic/Syriac.
Prerequisite: Hebrew 204.
A study of the elements of Aramaic/Syriac, especially as related to Hebrew, along with simple readings from religious texts.

403. Advanced Readings from Religious Aramaic/Syriac Texts.
Selected readings from the Bible, the Dead Sea Scrolls, and early rabbinic literature with selections from the ancient Peshitta translation of the Bible and early patristic writings in Syriac.

PHYSICS AND ASTRONOMY

Head: Duncan. *Staff*: Abbe, Baker, Burkhard, Chou, Cooper, Edwards, Henkel, Johnson, Landau, Lee, Love, Meltzer, Menendez, Nance, Reuning, Rives, Scott, Shaw, Steuer, Strobel, Uzes, Wood.

Astronomy (AST)

102 Physical Astronomy
Prerequisite: C or better in PCS 101.
Discussion of the physical nature of the solar system, stars and their evolution, galaxies and the universe. Credit cannot be given for both AST 102 and AST 291.

291. Descriptive Astronomy.
A survey of the planetary system followed by a more extensive discussion of stars, nebula, galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques.

295. The Planetary System.
Prerequisite: PCS 101 or AST 291.
A study of the structure of planetary interiors, surfaces and atmospheres and of satellites, comets and interplanetary material. Emphasis is put upon astronomical studies of interest to geologists, geographers, ecologists, biologists and others interested in the origins of the earth, moon, and planetary system.

392. Introduction to Astrophysics.
Prerequisite: Astronomy 291 and Physics 239.
Spectra of sun, stars, and interstellar matter; absorption and emission coefficients; line formation and curve of growth; spectral classification; mass-luminosity law; radiative transfer; stellar models, evolution, and energy sources.

396. Topics in Astronomy.
Prerequisite: Astronomy 291 and Physics 128 or 138.
Recent advances in astronomy ranging from the Apollo moon landings and solar system probes near Venus and Mars to the newest developments in infrared, ultraviolet and radio astronomy. Quasars, pulsars, galactic evolution, cosmological theories and other life in the universe.

591. Astronomy for Teachers.
A survey of the planetary system followed by a more extensive discussion of star, nebulae, galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques. Not open to students with credit in Astronomy 291.

Physics (PCS)

101. Physical Science.
A survey to give an elementary knowledge of fundamental laws and concepts in physics and astronomy and to give an understanding of how the scientific method as exemplified by physical science has contributed to man's thinking. No credit will be allowed to students with prior credit in any physics course.

105. Physics for Elementary Teachers. Two hours of recitation and six hours of laboratory.
A laboratory centered study of the basic principles and processes of physics designed for elementary education students. Credit is given only to students in the College of Education majoring in elementary education. No credit is given to students with prior credit in a physics course.

127, 127L. Mechanics and Kinetic Theory. Four hours of recitation and two hours of laboratory.
Prerequisite: Mathematics 101 or 116.
An introductory course that deals with the fundamental laws of mechanics and thermodynamics.

128, 128L. Wave Motion, Electricity, and Magnetism. Four hours of recitation and two hours of laboratory.
Prerequisite: Physics 127.
An introductory course dealing with the fundamental laws of electricity and magnetism, the properties of light and simple optics.

137, 137L. Introductory Physics for Science Students—Mechanics. Four hours of recitation and three hours of laboratory.
Prerequisite: Mathematics 253; corequisite: Mathematics 254.
Fundamental laws of mechanics. No credit will be allowed for Physics 137 if credit is shown for Physics 127.

138, 138L. Introductory Physics for Science Students—Heat, Electricity and Magnetism.
Four hours of recitation and three hours of laboratory.
Prerequisite: Physics 137.
Fundamental laws of thermodynamics, electricity and magnetism. No credit will be allowed for Physics 138 if credit is shown for Physics 128.

202. Problems of Our Physical Environment.
Prerequisite: PCS 101 or equivalent.
Present and proposed methods for energy production, transfer, and storage, physical models for noise, thermal and atmospheric pollution. Survey of problems and alternatives provided by technology.

229, 229L. General Physics—Modern Physics. Four hours of recitation and two hours of laboratory.
Prerequisite: Physics 128.
An introductory course in modern physics.

239, 239L. Introductory Physics for Science Students—Light and Modern Physics. Four hours of recitation and three hours of laboratory.
Prerequisite: Physics 138.
Light and quantum physics. Atomic, molecular and nuclear properties. No credit will be allowed for Physics 239 if credit is shown for Physics 229.

332, 332L. Experimental Electricity. Three hours of recitation and six hours of laboratory.
Prerequisite: Physics 239 (229) and Mathematics 255.
Electrical circuits and electronic devices. Electrical and magnetic measurements.

333, 333L. Waves and Relativity. Four hours of recitation and three hours of laboratory.
Prerequisite: Physics 239 (229) and Mathematics 255.
Study of wave motion with emphasis on the behavior and properties of light. Introduction to the special theory of relativity.

400. Physics Seminar. 1 hour credit per quarter.
Discussion of contemporary topics in physics.

404. Theoretical Mechanics. 4 hours.
Prerequisite: Physics 239 (229) and Mathematics 358.
Statics, kinematics, and dynamics of a particle and of systems of particles.

420. Electricity and Magnetism. 4 hours.
Prerequisite: Physics 239 (229) and Mathematics 459 or Physics 404.
Experimental foundations; development of Maxwell's equations.

425, 425L. Electronics and Electrical Aids to Measurements. Four hours of recitation and three hours of laboratory.
Prerequisite: Physics 239 (229) and Mathematics 254.
Circuit theory; basic electronic devices; amplifiers; feedback; pulse and digital circuits.

427. Basic Electronics for Scientists.
Prerequisite: PCS 128 and MAT 254.
Electric circuit theory and electronics intended to deal with the instrumentation problems of experimental scientists. Not open to majors in physics.

430. Thermodynamics and Kinetic Theory. 4 hours.
Prerequisite: Physics 239 (229) and Mathematics 358.
The laws of thermodynamics and their application to physical systems. Kinetic theory.

431. Kinetic Theory and Statistical Mechanics. 4 hours.
Prerequisite: Physics 404 and Physics 430.
An introduction to statistical mechanics and its application to the study of gases.

435. (BIO/BCH) Molecular Biophysics.
Prerequisite: Physics 229 or 239, Biology 102, and Mathematics 256 and/or consent of instructor.
A selection of various topics of current interest in biophysics to include molecular spectroscopy and photobiology, properties of macromolecules, analysis of electrical activity of nerves and muscles, introduction to theoretical biology, mathematical modeling of biological systems, membranes and genetics.

440. Classical Theoretical Physics. 4 hours.
Prerequisite: Physics 404 and 420.
Methods of problem solving and formal developments in mechanics to the formulations of Lagrange and Hamilton. Applications of Maxwell's equations.

450. Atomic Physics and Quantum Mechanics I. 4 hours.
Prerequisite: Physics 404 and 420.
Development of wave mechanics with applications to atomic structure.

451. Atomic Physics and Quantum Mechanics II. 4 hours.
Prerequisite: Physics 450.
Development of wave mechanics with applications to atomic and molecular structure.

465, 466, 467. Experimental Physics. 3 hours each. Eight hours of laboratory.
Prerequisite: Physics 332.
Laboratory courses in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

472. Nuclear Structure. 4 hours.
Prerequisite: Physics 450.
Introduction to the theory of nuclear structure as it has been inferred from quantum mechanical considerations and the study of experimental data on radioactivity and nuclear reactions.

482. Solid State Physics. 4 hours.
Prerequisite: Physics 450 and Physics 430.
Elastic, electrical, magnetic, and thermal properties of solids. Covers such topics as: crystal structure, elasticity, crystal imperfections, thermal and electrical conduction, spin resonance, the photoelectric effect, and transistor theory.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

527, 527L. Mechanics for Teachers. Four hours of recitation and two hours of laboratory.
Prerequisite: Mathematics 101 or 116.
Credit is limited to students working for a degree in education. This course is designed to aid the elementary physics teacher in dealing with problems in mechanics which may arise in his teaching. The effective presentation of physical concepts in this area will be emphasized.

528, 528L. Waves, Electricity, and Magnetism. Four hours of recitation and two hours of laboratory.
Prerequisite: 15 hours of physics.
Credit is limited to students working for a degree in education. This course is designed to aid the elementary physics teacher in dealing with problems in electricity, magnetism and light which may arise in his teaching. The effective presentation of physical concepts in these areas will be emphasized.

529, 529L. Modern Physics. Four hours of recitation and two hours of laboratory.
Prerequisite: 15 hours of physics.
Credit is limited to students working for a degree in education. This course is designed to aid the elementary physics teacher in dealing with problems in modern physics which arise in his teaching. The effective presentation of physical concepts in these areas will be emphasized.

POLITICAL SCIENCE (POL)

Head: Beth. *Staff*: Almy, Baker, Bertsch, Billingsley, Bothun, Bullock, Campbell, Carter, Chittick, Clute, Dunn, Gibson, Gist, Golembiewski. Grafstein, Miller, Nigro, Park, Parthemos, Regens, Rudder, Saye, Stein, Steiner, Tallarico, Thompson, van Dalen, Vasillopulos, Wright. Askew (Emeritus), Range (Emeritus).

American Government and Constitutional Law

101. American Government.
An introductory course covering the essential facts of federal, state, and local governments in the United States. Prerequisite for advanced courses in political science. A passing grade will exempt a student from the requirement of passing an examination on the Constitution of the United States and the Constitution of Georgia before graduation.

105H. American Government (Honors).
Not open to students with credit in political science 101. An introductory course which emphasizes United States government and politics and introduces the student to source materials of American political theory and American political institutions.

202. Contemporary Political Analysis.
This course is intended to be the second course taken in a political science sequence (after POL 101). It is strongly recommended for those who are considering a major in political science, and for those who want to take one course beyond POL 101.

The course deals with three major topics. First, it covers the major ways in which citizens exert influence on their government. This may include a range of activities from voting and interest group activities to rioting and revolution. The second main topic involves the major ways in which government influences the citizens. This may include such things as taxation and social policy. Finally, the course will introduce the major subfields of political science.

205. Introduction to the Legal Process.
An examination of the nature of law, legal reasoning and the structure and function of legal institutions and the legal profession. Open to all undergraduates and recommended for those considering law as a career.

212H. American Government (Honors).
The course follows the outline of POL 202, and is not open to students with credit in POL 202.

350. Internship in Government.
This course is specifically designed for the academic portion of government internship programs. It will variously consist of seminars, assigned readings and research assignments and will supplement the practical experience gained by interns in the performance of their duties in governmental agencies. Information on the various government internship programs is available in the Department of Political Science.

410. American Political Parties.
A study of organized groups whose purpose is to influence or control government in the U.S. Particular emphasis will be placed on the structure and activities of the two major political parties. The future of the American party system will be considered.

411. The Electoral Process.
An examination of American campaign techniques and election dynamics within the context of theories of representative government.

414. The Legislative Process.
A study of the U.S. Congress with emphasis on recruitment and composition leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress will be examined in light of theories of representation.

416. Political Socialization and Recruitment.
A study of the processes of the development of political attitudes and the agents responsible for that development at various stages in an individual's life cycle.

419. Politics of Race.
An in-depth survey of the major political responses of women and minority, racial and ethnic groups in the U.S. to conditions of deprivation and inequality. The course will focus on the relationship of these groups to the larger society.

437. The Politics of Violence.
A comparative examination of political violence with major emphasis on revolution. This course will engage the student in an intensive study of the psycho-political characteristics of revolutionaries, their followings, and the events of society-wide magnitude necessary for revolution to occur. The probability of violent revolution in America will be assessed.

447. Law Enforcement Process.
An analysis of the structure of the criminal justice system which emphasizes the legal and political influences affecting the operation of police agencies, criminal courts, and correctional institutions.

448. Law Enforcement Administration.
An analysis of the organization structure of police agencies and criminal courts, with emphasis on methods for improving the efficiency and effectiveness of these agencies.

471. Federalism and Intergovernmental Relations.
An analysis of intergovernmental relations within the United States which draws comparisons with other federal nations.

483. American Constitutional Law.
A study of the fundamental principles of constitutional interpretation and practice in the United States through decisions and opinions of the Supreme Court.

484. American Constitutional Law.
A continuation of Political Science 483, with emphasis on recent Supreme Court decisions.

488. Judicial Behavior and Modern Jurisprudence.
Theoretical and empirical approaches to the study of U.S. court systems as a part of the total political system.

491. Seminar in American Government and Politics.
Accelerated, in-depth readings and research in a chosen area of American politics.

State and Local Governments

405. The Constitution of Georgia.
An historical survey of the evolution of the Constitution of Georgia followed by a detailed study of the present Constitution through decisions and opinions of the Supreme Court of Georgia.

417. Urban Politics.
An analysis of the political processes occurring within American cities. Particular attention is focused upon the varied socio-political structures prevalent in U.S. cities. The effects of these structures upon the ability of cities to resolve complex urban conflicts is also examined.

418. State Government.
The politics of organizing and operating state government in the U.S., emphasizing the state of Georgia. Exempts students from exam on Constitutions of U.S. and Georgia.

469. Urban Affairs and Problems.
This course examines the dynamics of policy-making in U.S. cities. Specific attention is devoted to the role of elected and appointed officials in influencing public policy outcomes. The impact of citizen participation on the policy process is also discussed. Specific policy areas of housing, transportation, employment, race relations and others will be emphasized.

Political Theory

300H. (SOC) Social and Political Theory (Honors Colloquium).
A study of some major theories concerning man's political, economic, educational, and religious institutions, emphasizing a cross social science disciplinary approach.

301H. Issues in Political Philosophy.
A study of basic questions in political philosophy: e.g., purposes of government, forms of government, relationships of government and individual, and the limits of political authority.

319. Theories of Minority Group Politics.
A study of contemporary viewpoints on the characteristics of the U.S. political system and its problems in respect to racial and other minority group cleavages.

401. Political Philosophy: Plato to Machiavelli.
Analysis of selected works of such writers as Plato, Aristotle, Cicero, St. Augustine, and St. Thomas, concluding with the rejection of classical thought by Machiavelli.

402. Political Philosophy: Hobbes to Nietzsche.
A study of the development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

403AB. Major Concepts in Political Theory. 5 hours each.
A study of theoretical developments in contemporary political science. The first course examines empirical theories; and the second considers choice and decision-making theories.

404. Research Methods in Political Science.
This course deals with three areas of analysis in political science: (1) the definitions and uses of theories, hypotheses and research designs; (2) problems of measurement of political phenomena and data collection and (3) techniques for summarizing and presenting data in a research paper. The course will be based on substantive examples from different sub-fields of the discipline.

408. Problems in Democratic Theory.
A study of major problems that arise in theoretical discussions of democracy, such as the nature of democratic government, its purposes, its justification, its limitations and the conditions necessary for its maintenance.

409. Contemporary Political Thought.
A study of major issues in 20th century political thought. Attention will be given also to the theoretical roots of major contemporary ideologies.

Comparative Governments and International Relations

203. Introduction to International Relations.
International relations introduced through games and simulations so that students experience decision-making in a miniature prototype of the complicated international system.

213H. Introduction to International Relations (Honors).
Games and simulations introduce students to decision-making in international relations. Not open to students with credit in POL 203.

420. Approaches to International Relations.
A study of the theories, forces, and practices dominating contemporary international relations.

421. International Organization.
The principles, organizations, and functions of international governmental organizations, such as the United Nations, Organization of American States, Council of Europe, the specialized agencies, and the international judiciary.

422. International Legal Processes.
The elements of international law, chiefly as applied and interpreted by the United States.

425. Foreign Policy.
An advanced course dealing with the foreign policy-making process.

426. International Conflict.
An introductory study of the sources, types, and resolutions of international conflict situations. Special attention is devoted to the study of crisis, intervention, and war.

430. Western European Political Systems.
A comparative description and systematic analysis of political institutions and processes in the major European political systems. Emphasis is also given to various approaches to comparative analysis.

431. Social Change and Political Development.
A comparative analysis of political institutions and behavior in selected Afro-Asian commonwealth countries with special emphasis on the political dynamics of modernization in these developing areas.

432. Communist Political Systems.
An analysis of political processes and governmental institutions in the USSR and mainland China. Analysis will be made of the implications of changes in these systems for an understanding of contemporary Communism.

433. Comparative Eastern European Political Systems.
A comparative analysis of the political systems of Eastern Europe (excluding the USSR). While emphasis is placed on post-1944 developments, attention is given the constitutional and political systems between the world wars.

438. Contemporary African Politics.
A comparative analysis of the political process in sub-Saharan Africa with special emphasis on the politics of political change.

439. Far Eastern Political Systems.
The structure, principles and practices of political parties and governments of the Far East with particular emphasis on China and Japan.

493. Seminar in International Relations.
This seminar is designed to help the student to deepen his understanding of international relations and integrate it with his knowledge of other areas of political science.

494. Seminar in Comparative Government.
Accelerated, in-depth readings and research on selected problems of comparative politics and government.

Public Administration

441. Principles of Public Administration.
General principles and problems of administrative organizations, relationships, and controls in the United States. Problems of personnel, finance, administrative law, and the growth and significance of administrative legislation and adjudication.

442. Public Personnel Administration.
Procedures and problems of governmental personnel administration. Human relations aspects. Studies of governmental agencies are employed to give the students first hand knowledge of governmental personnel administration.

443. Public Finance Administration.
Activities involved in the collection, custody and expenditure of public revenue, namely: the assessment and collection of taxes, public borrowing and debt administration, the preparation and enactment of the budget, financial accountability and the audit.

445. Comparative Administration.
A study of the administrative structures and practices of selected western and non-western countries with major emphasis on the differences and similarities.

446. Government Organization and Administrative Theory.
A systematic analysis of theories of organization, management and administration. Special consideration will be given to institutional, behavioral and psychological factors.

449. Personnel Problems in Public Agencies.
In-depth treatment of selected problems in public personnel administration to develop analytical and behavioral skills through cases and other vehicles to simulate realistic situations.

451. Policy Analysis.
An analysis of major policy decisions in areas such as civil rights, welfare, and regulation of the economy, focusing on the impact of these decisions on the political system and its environment.

452. The Executive Function in Political Systems.
A historical examination of the President of the United States. The President's constitutional position will be addressed, including theories of executive dominance and executive privilege. Attention will also be given to the President's attempt to control the executive branch and presidential-congressional relations.

489. Administrative Law.
The legal principles and practical doctrines involved in the work of administrative agencies vested with quasi-legislative or quasi-judicial powers.

496H, 497H, 498H. Independent Reading or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

PSYCHOLOGY (PSY)

Acting Head: Payne. *Staff*: Adams, Allen, Barry, Beiman, Bernstein, Boardman, Britton, Bunnell, Calhoun, Ciminero, Darby, Estep, Forehand, Giddings, Grant, Graziano, Hammes, Hammock, Hazen, Hodge, Isaac, Joelson, Karwoski, Katz, Lahey, LaPointe, Leonard, Lissitz, Mendoza, Mulligan, Noble, O'Connor, Osborne, Owens, Payne, Peacock, Pollack, Proenza, Richman, Rosen, Shaffer, Silver, Smock, Tesser, Thomas, von Glasersfeld, Wilbanks.

Psychology 101 is a prerequisite to all other courses in psychology, except Psychology 103H and 258. The major includes Psychology 322, and 15 hours from Psychology 330, 332, 334 and 336.

101. Elementary Psychology.
The introductory psychology course is designed to acquaint the student with the empirical phenomena, laws, theories, and history of psychology. The student reviews the data and

hypotheses derived from studies of animal and human learning, motivation, perception, differential, and social behavior. Particular attention is paid to the biological correlates of behavior. The emphasis is upon the fundamental principles of psychology rather than upon the application of these principles. Supplemental readings will be assigned in some portions of the course. Students will also be given the opportunity to participate in research.

103H (203H). General Psychology (Honors).
A survey of general psychology, with emphasis on theoretical issues in current psychology and on methodological problems encountered in the area. Not open to students with credit in Psychology 101.

258. The Psychology of Adjustment.
A course in mental hygiene, dealing with the appropriate and inappropriate reactions to frustration and stress; solutions of conflicts, fears, and anxiety; building emotional stability and preventing mental illness. Not credited toward psychology major.

371. Applied Psychology.
A survey of the applications of the principles of psychology to social, professional, industrial, governmental, and educational fields.

474. (PHY) Philosophy of the Mind.
Prerequisite: At least one course in psychology or a related field.
A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psycho-analytic, the phenomenological, with particular attention to such problematic areas as the nature and validation of psychological concepts, laws, and theories, and knowledge of other minds.

General Experimental Psychology

300. Special Problems. 2–15 hours (maximum of 5 hours per quarter).
Prerequisite: 20 hours in psychology.
A course designed for the advanced undergraduate student who wishes to conduct independent study and research.

322. Experimental Psychology.
Introduction to the experimental and quantitative methods used by psychologists to generate new psychological knowledge, and to determine the generality, validity, and reliability of research data. Laboratories will offer demonstrations as well as direct experience with research methods and techniques, and with methods for the analysis and description of research results.

330. Biological Foundations of Behavior.
Prerequisite: Psychology 322.
Introduction to empirical studies in physiological, sensory, and comparative psychology. Laboratory work will offer direct experience with basic concepts and methods in these areas.

332. Behavior Analysis and Theory.
Prerequisite: Psychology 322.
Introduction to empirical studies in the areas of learning, perception, and motivation. Laboratory work will offer direct experience with basic concepts and methods of these areas.

404. History of Psychology.
A study of the history of psychology and its antecedents, of systematic developments and the types of research these systems have produced.

417. Introduction to Mathematical Psychology.
Prerequisite: Statistics 200, Psychology 322, or equivalent.
This course is a survey of the applications of mathematics and mathematical reasoning to problems in psychology. The course will include a wide variety of approaches; i.e., game theory, information theory, scaling, signal detection theory, mathematical learning theory, graph theory, and decision theory.

422. Experimental Design in Psychopathology.
An advanced laboratory course in experimental methods and measurement of behavior, with emphasis on the empirical content of psychology.

452. Learning and Motivation.
Cognitive and neurological theories of motivation. Current experimental research in the area of motivation.

455. Psychology of Learning.
An empirical and theoretical study of classical and instrumental conditioning, discrimination learning, the acquisition of complex skills, and response elimination.

456. Psychology of Sensation.
Current experimental findings and theories of vision, audition, kinesthesis, vestibular function, the skin senses, and chemical sensitivity.

457. Psychology of Perception.
The phenomena of perception are investigated. Empirical and experimental demonstrations are conducted, followed by a study of the various theories of perception.

472. (EPY) Programmed Instruction.
Prerequisite: Psychology 101 or Education 304.
A study of the theory, evaluation and writing techniques of programmed instruction with practice in writing a program.

475. (ANT) Principles of Primate Phylogeny.
An introduction to the interrelationships between morphology, behavior, and systematics for students of primate behavior.

476. (ANT) Comparative Physical and Psychological Development of the Primates.
A consideration of species and developmental environment as they influence normal and abnormal behavioral development.

477. (ANT) Organization of Primate Social Groups.
The interaction of ecology, phylogeny, individual behavior and group organization is considered in comparative perspective.

480. Physiological Psychology.
Prerequisite: 10 hours in biology.
The relationship between the internal environment and such behaviors as food intake control, mating behavior, neural action, emotion, etc. are studied.

481. Comparative Psychology.
Prerequisite: 10 hours in biology.
An analysis of the structure and behavior of the amoeba and the animal series to man. The integration of structure, psychological processes and behavior are emphasized throughout the course, resulting in a more thorough understanding of the adjustment processes.

496H, 497H, 498H. Independent Study and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

Psychometrics and Personnel Psychology

336. Introduction to Measurement and Human Differences.
Introduction to empirical studies of individual and group differences in cognitive and noncognitive traits. Laboratory work will offer direct experience with basic concepts, methods and implications in these areas.

414. Psychology of Personnel.
A survey of the area of personnel psychology applied to the fields of business, industry and government.

415. Psychometrics.
A course designed to give the student an introduction to the essentials of psychological testing with experience in administering, scoring, and interpreting group tests.

453. Individual Differences.
The nature and interrelationships of psychological traits and human differences are studied.

561. (MKT) Behavioral Theory and Marketing.
Prerequisite: Marketing 360.
The psychology of decision formation and action are analyzed in relation to the motives, attitudes, and expectations of consumer and businessmen that contribute to the marketing process.

582. (MAN) Personnel Measurement.
Prerequisite: Economics 312 or Psychology 200.
A study of quantitative methods and research models applicable to the measurement of personnel and their work behavior in organizations.

586. (MAN) Wage and Salary Administration.
Prerequisite: Management 585 or Psychology 414.
A study of job evaluation and other procedures that lead to the development of a sound wage and salary structure; problems of administration, executive compensation, and financial incentives.

587. Work and Efficiency.
Human factors in relation to work and equipment design; principles of work measurement.

588. (MAN) Personnel Selection and Placement.
Prerequisite: Psychology 582.
A study of methods applicable to the development of valid standards of personnel selection and placement with the use of psychological tests, the personal interview, and other kinds of personal data.

Personal and Social Development

334. Social and Personal Behavior.
Prerequisite: Psychology 322.
Introduction to empirical studies in the areas of personality and development, and social behavior. Laboratory work will offer direct experience with basic concepts and methods in these areas.

373. (SOC) Social Psychology.
The social aspects of psychology; the origin and development of social behavior, interaction of individuals with groups, social motivation, suggestion, and attitudes. Methods of research

in social psychology with special attention to use of experimental techniques.

374. Developmental Psychology.
A survey of the procedures and research on the physical and psychological development of the maturing human.

395. (CFD) Introduction to Child Development.
Four lectures, one laboratory period, and one discussion period.
Prerequisite: Psychology 101.
A survey of the physical, cognitive and personality development of children with emphasis upon the years two to ten.

406. Psychology of Aging.
Prerequisite: Introductory gerontology, PSY 322, and PSY 374.
A survey of age-related changes in behavior with an emphasis on the life span aspects of psychology and gerontology. Discussions will cover empirical and theoretical research on learning, personality, attitudes, sensation, perception, aptitudes, ability, and potential with particular reference to behavioral changes in the latter portion of the life span. Research related to adjustment problems among the aged will be reviewed.

407. Humanistic Psychology.
Prerequisite: Two upper division courses in psychology or equivalent.
As the "third force" in psychology, humanistic psychology includes the study of self-theory, being-psychology, and contributions of the humanities to psychology.

408. (CFD) Development of the Young Child.
Prerequisite: PSY 101 and 395 or equivalent.
Four lectures and two periods of supervised observation in nursery school and infant center. The physical, mental, emotional, and social development of the preschool child, and origins of psychological processes; in laboratory work, special reference to techniques of guidance.

423. Abnormal Psychology.
The study of the various forms of mental illness and maladjustment, including mental deficiency, and anti-social behavior.

449. Psychology of Language.
Prerequisite: Permission of Instructor.
Theories and relevant data are studied from the perspective of language as a communicative device.

450. (SPA) Language Development.
Prerequisite: Education 304 or equivalent and Psychology 408.
Process of reception, integration, and expression of symbolic information; nature and effects of linguistic symbolism on personal development and behavior; and language development norms.

451. Theories of Personality.
The biological and psychological foundations of personality will be studied. Emphasis will be placed on the integrated aspects of personality.

454. Psychology of Values.
A significant contemporary problem is the search for meaningful values in this age of crisis. Value conflicts are increasingly evident on personal, group, national and international levels. This course will examine the contributions of psychology to the resolutions of these problems, in terms of value measurement and theoretical implications of research findings. Both behavioral and humanistic perspectives will be studied. The course is open to non-psychology majors.

459. Mental Hygiene.
An advanced course dealing with mental hygiene problems, especially of children and adolescents and problems of different stages of maturation adjustments in the home, school and play group.

460. Dyadic Interaction Analysis.
Theories of personality, interpersonal behavior, and social learning are examined from the standpoint of their applicability for understanding the process of psychotherapy.

465. Methods and Practices in Clinical Psychology.
A survey of assessment and behavior-personality change procedures currently used in clinical psychology. The course will also focus on theoretical issues important to these applied procedures.

466. (SPC) Psychology of Speech.
Prerequisite: Speech 108 and Psychology 101 and 2 senior division courses in speech, classics, psychology, or English.
The use of symbols, the speech personality, emotional reactions and higher mental processes in speech, psychological studies of language and vocal and visual symbolism.

ROMANCE LANGUAGES (ROM)

Head: Dowling. *Staff*: Barrick, Davis, de Gorog, Durham, Gómez, Hassell, Hernández, Johnson, Kalivoda, Lee, Lundelius, Mantero, Morain, O'Healy, Piriou, Ramirez, Scott, Smith, Snow, Valis, Walz, Wolfe, Ziomek.

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by the University of Georgia Testing and Evaluation Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information.

No student may receive credit for any course which is a prerequisite to a course for which he has already received college credit. Exception may be made only by the head of the department.

Majors.
A major in French or Spanish ordinarily consists of 40 quarter-hours of course work above the 200 level including the following: French or Spanish 210 and 211; French or Spanish 310 plus at least one of French or Spanish 311, 312, 313; and four courses in advanced French or Spanish literature, language and civilization at the 300 or 400 level.

A major in Romance Languages (French, Italian, Spanish) shall include a minimum of 30 quarter-hours in one Romance language at the 200 level and above, plus a minimum of 20 quarter-hours in another Romance language at the 200 level and above. Interested students should consult with the academic advisors in the department.

Graduate School Reading Knowledge Requirement.
A grade of B or better in French or Spanish 350 will satisfy the reading knowledge requirement of the Graduate School. Italian or Portuguese 360 may also be accepted by some departments to satisfy this requirement.

Undergraduate Literature Requirement.
Students may take any of the following courses to satisfy the literature requirement: French 211, 216H, 310, 311, 312, 322H; Italian 310, 311; Spanish 211, 216H, 310, 311, 312, 313, 321H.

Accelerated Courses.
The department schedules accelerated courses in French, Italian, and Spanish during certain quarters so that the sequences 101–102 and 103–104 may be completed in two successive quarters. Interested students should consult the departmental office.

Catalan (CAT)

401. Catalan Language and Literature.
Prerequisite: At least four terms of another Romance language or Latin, or by consent of the instructor.
This course will teach a reading knowledge and basic conversational knowledge of Catalan, the essential grammatical structures, the main lines of literary history, and the importance of Catalan nationalism in the Spanish context.

French (FR)

101. Elementary French.
A course designed to teach the student to pronounce French, to conduct simple conversations, and to read texts within a limited vocabulary range. Oral practice, emphasis upon sentence patterns, and the fundamental principles of structure. Students in this course may be required to spend a minimum of one hour a week outside of class in the language laboratory.

101A. Beginning French.
An introductory course for students who present college entrance units in high school French but whose placement score is below that required for French 102.

102. Elementary French.
Prerequisite: French 101, 101A, or one entrance unit in French.
A continuation of French 101 or 101A.

103. Intermediate French.
Prerequisite: French 102 or two entrance units in French.
Intensive and extensive reading, as well as oral practice in the language. Texts of moderate difficulty selected from well-known authors. A rapid review of French grammar, irregular verbs, and idioms. Students in this course may be required to spend a minimum of one hour a week outside of class in the language laboratory.

104. Intermediate French.
Prerequisite: French 103 or equivalent.
Intensive and extensive reading of texts of marked literary merit. Grammar review, pronunciation and conversation. Prepares students to read French in their specialized fields, to enter courses in French literature (211), or to enter courses in conversation and composition (106 or 210).

104A. Intermediate French.
Prerequisite: French 103 or equivalent.
French culture and civilization. Readings and discussions on the French way of life, French contributions to civilization, current events in France. Fourth-quarter language review, with emphasis on comprehension of readings and oral practice.

104B. Intermediate French.
Prerequisite: French 103 or equivalent.
Language review; commercial French. General readings and discussions on French commerce and economics with particular emphasis on basic commercial and corporate vocabulary, commercial letter writing, French and English equivalent commercial systems and language.

104C. Intermediate French.
Prerequisite: French 103 or equivalent.
Readings and discussions in the sciences and humanities, including fields such as science, history, architecture, and international politics. Fourth-quarter language review, with emphasis on comprehension of readings and translation.

106. Spoken French for Travelers.
Prerequisite: French 104.

114H. Accelerated Intermediate French (Honors).
Prerequisite: French 101 and 102 or two entrance units in French. Honors students who do satisfactory work in this course may substitute it for French 103 and 104. It is not available for students who have had either French 103 or 104 or both.

145. French Diction. 1 hour.
A study of French pronunciation, with special emphasis on the fundamentals of French phonetics and sound production as applied to reading and singing. Open to voice majors and others interested. Two class hours per week.

210. French Conversation and Composition.
Prerequisite: French 104 or French 114H.
The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote the student's ability to express himself accurately whether in speaking or in writing French.

211. Critical Reading of French Literature.
Prerequisite: French 104 or French 114H.
An introduction to the critical reading and interpretation of French literature through the study of representative masterpieces in various genres. The student will be presented with the basic vocabulary and techniques of literary analysis and criticism.

215H. French Conversation and Composition (Honors).
Prerequisite: French 114H or French 104 with honors standing. See French 210. Not open to students with credit in French 210. May be substituted by French majors for French 210.

216H. Critical Reading of French Literature (Honors).
Prerequisite: French 114H or French 104 with honors standing. See French 211. Not open to students with credit in French 211. May be substituted by French majors for French 211.

French 210 is prerequisite to all advanced French language and civilization courses. French 211 is prerequisite to all advanced French literature courses.

306. French Conversation and Composition.
Designed to provide additional practice in French conversation and composition beyond French 210.

310. French Literature from the Middle Ages to the Seventeenth Century.
Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from the medieval period to the end of the 17th century.

311. French Literature from 1700 to 1848.
Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from 1700 to 1848.

312. French Literature from 1848 to the Present.
Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from 1848 to the present.

322H. Modern French Literature (Honors).
Prerequisite: French 216H or French 211 with honors standing.
See French 312. Not open to students with credit in French 312. May be substituted by French majors for French 312.

350. Techniques of Translation.
Rapid survey of grammar, idioms and vocabulary; practice in translating moderately difficult technical and non-technical French. Intended to assist graduate students to satisfy reading knowledge requirement but does not carry graduate credit; not to be used to satisfy undergraduate language requirement; not open to French majors.

370. History of the French Language.
A history of the development of the French language from Latin to the present.

395, 396, 397. Study Abroad in French. 5 hours each. Max. 15 hours.

410. French Culture and Civilization.
A study of the history of French culture and of its contribution to world civilization from the Middle Ages to the present. Social, political, cultural and technical developments are illustrated in lectures, slide shows and discussions. Given in French.

411. La France Contemporaine.
The making of contemporary French society from 1958 to the present, as derived from analysis of the interrelationship of cultural, social, economic and political factors. Given in French.

430. The Romantic Movement in France.
The origins, development and manifestations of the romantic movement in France. Given in French.

431. The French Novel of the Nineteenth Century.
The development of the novel and its relationship to the various literary movements of the 19th century. Given in French.

432. French Poetry Since Romanticism.
Baudelaire; The Parnassians: Leconte de Lisle and Hérédia; The Symbolists: Verlaine, Rimbaud, Mallarmé. Given in French.

433. French Drama of the Twentieth Century.
A study of representative works of major 20th century French playwrights. Given in French.

434. The French Novel of the Twentieth Century.
A study of representative works of major 20th century French novelists. Given in French.

435. Contemporary French Poetry.
Analysis of major 20th century French poets. Given in French.

437. French Drama of the Nineteenth Century.
A study of the development of French drama in the 19th century from Romanticism to Post-Symbolism. Given in French.

459. French Literature of the Seventeenth Century. First Half.
Prose and poetic styles as studied in selected masterpieces from Malherbe to LaBruyère. Given in French.

460. French Literature of the Seventeenth Century. Second Half.
This course will concentrate almost exclusively on Corneille, Racine and Molière.

461. The Literature of the French Enlightenment.
A study of precursors and principal figures of the French Enlightenment. Given in French.

462. French Drama and Poetry of the Eighteenth Century.
French 18th century literature as represented principally by drama.

463. French Prose Fiction of the Eighteenth Century.
A study of representative works of major fiction writers of the 18th century. Given in French.

495, 496, 497. Study Abroad in French. 5 hours each. Max. 15 hours.
Courses in French offered by the Study Abroad Program of the University System of Georgia.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

503. Oral French for Teachers.
Development of advanced level listening and speaking skills emphasizing idiomatic aspects of French grammar and vocabulary expansion.

507F. (EFL) Applied French Linguistics.
The applications of the science of linguistics to the methodology of teaching French.

556. Advanced French Syntax and Composition.
Comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of French. Acquired knowledge will be applied in weekly compositions.

557. (LIN) French Phonetics.
A careful analysis of each of the sounds in French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription; use of tapes.

581. Problems of Teaching Romance Languages.
Prerequisite: French or Spanish 210–211 or 15 hours of education in addition to French or Spanish 104.

Italian (ITA)

101, 102. Elementary Italian. 5 hours each.
Grammar and composition, conversation, reading and dictation. Students in this course may be required to spend a minimum of one hour a week outside of class in the language laboratory.

103. Intermediate Italian.
Prerequisite: Italian 102.
Intermediate grammar, reading, conversation, dictation, and composition.

104. Italian Grammar, Composition and Conversation.
Prerequisite: Italian 103.
Intermediate reading and conversation.

145. Italian Diction. 1 hour.
A study of Italian pronunciation, with special emphasis on the fundamentals of Italian phonetics and sound production as applied to reading and singing. Open to voice majors and others interested. Two class hours per week.

306. Advanced Italian Conversation and Composition.
Prerequisite: Italian 104.
Designed to develop audio-lingual skills and proficiency in the practical use of the written language, with emphasis on current idiomatic Italian.

310. Italian Literature from the Middle Ages to the End of the Seventeenth Century.
Prerequisite: Italian 104.
Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from its origins to the end of the 17th century.

311. Italian Literature from 1700 to the Present.
Prerequisite: Italian 104.
Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from the 18th to the 20th centuries.

360. Intensive Italian.
Prerequisite: Previous study of another Romance language or Latin, or by consent of the instructor.
A concentrated course with fluent and accurate reading of the language as the main objective. Elements of grammar, practice in reading contemporary texts, and oral practice.

431. Petrarch and Boccaccio.
Prerequisite: Italian 310–311.
A study of early Italian humanism through the *Canzoniere* and selected prose works of Petrarch and the *Decamerone* of G. Boccacio.

471. The Italian Novel.
Prerequisite: Italian 310–311.
A study of the Italian novel from Manzoni to the present, including works by Verga, Pirandello, Svevo, Pavese, Vittorini and Calvino.

491. Topics in Italian Literature.
Prerequisite: Italian 310–311.
A study of specific Italian literary works, to be selected according to students' needs and interests. Selection may be determined by genre, author, or period. Lectures, papers, and reports.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

Portuguese (POR)

360. Intensive Portuguese.
Prerequisite: Previous study of another Romance language or Latin, or by consent of the instructor.
A concentrated course with fluent and accurate reading of the language as the main objective. Elements of grammar, practice in reading contemporary texts, and oral practice.

420. Masterpieces of Luso-Brazilian Literature.
A study of major Portuguese and Brazilian writers from the beginning to the present.

Romance (ROM)

Courses given in English with readings in English translation. These courses may not be used to satisfy degree requirements in foreign languages.

301. (ENG) Introduction to Folklore.
An introduction to folklore, including its definition, major fields and theories, and its relationships to other areas of learning, such as formal literature and history, music, the visual arts, anthropology and sociology.

342. Classical French Drama in Translation.
A study of classical French drama as exemplified in the works of Corneille, Racine, and Molière in English translations. Not open to French majors.

344. The Literature of the French Enlightenment in Translation.
A survey of 18th century French literature in translation with emphasis on the work of Montesquieu, Diderot, Rousseau and Voltaire. Not open to French majors.

346. Nineteenth Century French Novel in Translation.
A course dealing with the masterpieces of the 19th century French realistic novel, from Stendhal to Proust in English translations. Not open to French majors.

348. Contemporary French Literature in Translation.
A survey of 20th century French novel or drama

in translation (genre to be specified when offered). Course to include the New Novel and the Theatre of the Absurd. Not open to French majors.

362. Dante in Translation.
The Italian works of Dante in English translation; special emphasis on the *Divine Comedy*. This course will not carry credit toward a major in Italian.

372. Don Quijote in Translation.
An intensive study of Cervantes' masterpiece, *Don Quijote*, in translation. Not open to Spanish majors.

392. Contemporary Spanish Literature.
A survey in English of representative Spanish writers of the 20th century. Not open to Spanish majors.

398. Contemporary Spanish American Fiction in English Translation.
A study of the Spanish American novel since 1940. Works are read in translation. Not open to Spanish majors.

Spanish (SP)

101. Elementary Spanish.
Pronunciation, fundamentals of grammar, reading and conversation. Students in this course may be required to spend a minimum of one hour a week outside of class in the language laboratory.

101A. Beginning Spanish.
An introductory course for students who present college entrance units in high school Spanish but whose placement score is below that required for Spanish 102.

102. Elementary Spanish.
Prerequisite: Spanish 101, 101A, or one entrance unit in Spanish.

103. Intermediate Spanish.
Prerequisite: Spanish 102 or two entrance units in Spanish.
A rapid review of Spanish grammar, irregular verbs, and idioms. Intensive and extensive reading.

104. Intermediate Spanish.
Prerequisite: Spanish 103.
Intensive and extensive reading of texts of marked literary merit. Grammar review, pronunciation, and conversation. Prepares students to read Spanish in their specialized fields, to enter courses in Spanish literature (211), or to enter courses in conversation and composition (106 or 210).

104A. Intermediate Spanish.
Prerequisite: Spanish 103 or equivalent.
Readings and discussions about the Hispanic way of life, Hispanic contributions to civilization, current events in the Hispanic world. Fourth-quarter language review.

104B. Intermediate Spanish.
Prerequisite: Spanish 103 or equivalent.
General readings and discussions about the commerce and economics of the Hispanic world with particular emphasis on basic commercial and corporate vocabulary, letter writing, Spanish and American equivalent commercial systems and languages. Fourth-quarter language review.

104C. Intermediate Spanish.
Prerequisite: Spanish 103 or equivalent.
Readings and discussions about the social and health professions with emphasis on basic technical vocabulary. Fourth-quarter language review.

106. Spoken Spanish for Travelers.
Prerequisite: Spanish 104 or equivalent.

114H. Accelerated Intermediate Spanish (Honors).
Prerequisite: Spanish 101 and 102 or two entrance units in Spanish.
Honors students who do satisfactory work in this course may substitute it for Spanish 103 and 104. It is not available for students who have had either Spanish 103 or 104 or both.

210. Spanish Conversation and Composition.
Prerequisite: Spanish 104 or Spanish 114H.
The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote the student's ability to express himself accurately whether in speaking or in writing Spanish.

211. Critical Reading of Spanish Literature.
Prerequisite: Spanish 104 or Spanish 114H.
An introduction to the critical reading and interpretation of Spanish and Spanish-American literature through the study of representative masterpieces in various genres. The student will be presented with the basic vocabulary and techniques of literary analysis and criticism.

215H. Spanish Conversation and Composition (Honors).
Prerequisite: Spanish 114H. or Spanish 104 with honors standing.
See Spanish 210. Not open to students with credit in Spanish 210. May be substituted by Spanish majors for Spanish 210.

216H. Critical Reading of Spanish Literature (Honors).
Prerequisite: Spanish 114H or Spanish 104 with honors standing.
See Spanish 211. Not open to students with credit in Spanish 211. May be substituted by Spanish majors for Spanish 211.

Spanish 210 is prerequisite to all advanced Spanish language and civilization courses. Spanish 211 is prerequisite to all advanced Spanish literature courses.

306. Spanish Conversation and Composition.
Designed to provide additional practice in Spanish conversation and composition beyond Spanish 210.

310. Spanish Literature from the Middle Ages to 1700.
Intensive reading and analysis of the major works of representative Spanish writers and study of the main literary movements beginning with the origins of Spanish literature and continuing through the 17th century.

311. Spanish Literature from 1700 to the Present.
Intensive reading and analysis of the major works of representative Spanish writers and study of the main literary movements from 1700 to the present.

312. Spanish American Literature to the End of the Nineteenth Century.
Intensive reading and analysis of the major works of representative Spanish American writers and study of the main literary movements in Spanish American literature from its origins to the end of the 19th century.

313. Spanish American Literature from the End of the Nineteenth Century to the Present.
Intensive reading and analysis of the major works of representative Spanish American writers and study of the main literary movements from the end of the 19th century to the present.

321H. Modern Hispanic Literature (Honors).
Prerequisite: Spanish 216H or Spanish 211 with honors standing.
See Spanish 311. Not open to students with credit in Spanish 311. May be substituted by Spanish majors for Spanish 311.

350. Techniques of Translation.
Rapid survey of grammar, idioms and vocabulary; practice in translating moderately difficult technical and non-technical Spanish. Intended to assist graduate students to satisfy reading knowledge requirement, but does not carry graduate credit; not to be used to satisfy undergraduate language requirement; not open to Spanish majors.

370. History of the Spanish Language.
A history of the development of the Spanish language from Latin to the present.

395, 396, 397. Study Abroad in Spanish. 5 hours each. Max. 15 hours.

410. Spanish Culture and Civilization.
A study of the geography, history, arts, and letters of Spain from the beginnings to the present. Given in Spanish.

411. Spanish American Culture and Civilization.
A study of the geography and complex process of the cultural, historical and political evolution of the Spanish American countries from the origins of the indigenous civilizations to the present. Given in Spanish.

417. Golden Age Drama: Lope de Vega and His Contemporaries.
A study of the origins of the Spanish theater through the first half of the Siglo de Oro. Given in Spanish.

418. Golden Age Drama: Calderón and His Contemporaries.
A study of the representative works of the masters of the Siglo de Oro *comedia*. Given in Spanish.

419. The Spanish Novel of the Twentieth Century.
The development of the Spanish novel from the Generation of 1898 to the present. Given in Spanish.

420. The Spanish Novel of the Nineteenth Century.
A study of the Spanish novel from the beginning of *costumbrismo*, regionalism, and realism to the end of the 19th century. Given in Spanish.

422. Spanish Prose of the Golden Age.
A study of the novel and short story of this period with emphasis on Cervantes.

423. The Spanish Drama of the Nineteenth Century.
The development of Spanish drama from Moratín's neoclassic comedies to the realistic plays of Galdós and the early Benavente. Special emphasis on the romantic drama. Given in Spanish.

424. Spanish Prose Before the Golden Age.
A study of the exemplar collections, La Celestina, the chivalresque, sentimental and Moorish Novel.

425. The Spanish Drama of the Twentieth Century.
The development of Spanish drama from Benavente to the present. Given in Spanish.

427. Spanish Poetry of the Golden Age.
A critical study of the currents of Spanish poetry from 1500 to 1700.

432. The Modernista Movement in Spanish America.
A study of Rubén Darío, his contemporaries, and followers. Given in Spanish.

433. Spanish-American Short Story.
A study of the development of the short story in Spanish America from colonial times to the present. Given in Spanish.

434. Modern Spanish American Novel.
A study of the novel as a literary form in Spanish America from colonial times to the present. Given in Spanish.

435. Spanish American Drama.
An intensive study of the main trends, authors, and dramatic works from the colonial period to the present. Given in Spanish.

436. The Spanish American Essay.
A representative study of the history of the essay in Spanish America from the colonial period to the present. Given in Spanish.

437. Contemporary Spanish American Poetry.
The major poetic figures of the 20th century since the Modernista Movement. Given in Spanish.

450. Eighteenth Century Spanish Literature.
A study of the developments in Spanish letters and thought in the 18th century. Given in Spanish.

452. Spanish Romanticism.
A study of the origins and development of the romantic movement in Spain. Given in Spanish.

455. Spanish Poetry of the Nineteenth Century.
A study of Spanish lyric and narrative poetry from Romanticism to the end of the 19th century. Given in Spanish.

456. Contemporary Spanish Poetry.
Readings in the poets of the various schools of the 20th century. Given in Spanish.

460. Generation of 1898.
The origins, development, and influence of this early 20th century renaissance of Spanish letters. Given in Spanish.

495, 496, 497. Study Abroad in Spanish. 5 hours each. Maximum 15 hours.
Courses in Spanish offered by the Study Abroad Program of the University System of Georgia.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

503. Oral Spanish for Teachers.
Development of advanced level listening and speaking skills emphasizing idiomatic aspects of Spanish grammar and vocabulary expansion.

507S. (EFL) Applied Spanish Linguistics.
The applications of the science of linguistics to the methodology of teaching Spanish.

526. Advanced Spanish Syntax and Composition.
A comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of Spanish.

528. (LIN) Spanish Phonetics.
A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation.

581. Problems of Teaching Romance Languages.
Prerequisite: French or Spanish 210–211 or 15 hours of education in addition to French or Spanish 104.

SANSKRIT (SKT)

See Linguistics 461–463

SCIENCE (SCI)

207H. Honors Science. 6 hours.

208H. Honors Science. 7 hours.

209H. Honors Science. 7 hours.

517P/717P. Physical Science for Teachers. 1–10 hours.

SOCIAL SCIENCE (SOS)

The following courses are offered under the general direrection of the Chairman of the Division of Social Sciences. For additional information contact the Department of Philosophy and Religion.

104. Contemporary Georgia.
A study of Georgia dealing with significant social, economic and political trends of the state. The analysis of interaction among past, present and future social conditions in the fields of health, education, welfare and corrections.

201H, 202H, 203H. Special Problems Seminar in Social Science. 3 hours each.

215. (SW) Field of Social Works.
See Social Work.

220. (SW) Social Welfare as a Social Institution.
See Social Work.

352. (SW) Principles and Methods of Social Case Work.
See Social Work.

391ABCD. (SW) Seminar in Social Work Practice.
See Social Work.

399. Georgia Intern Program. 5–15 hours.
A comprehensive service-learning experience involving specific projects in public agencies with emphasis upon completion of a specific task and acquisition of knowledge and skills of a professional nature. Application should be made two months in advance of beginning date. Additional information under Governor's Intern Program.

SOCIOLOGY (SOC)

Head: Ellis. *Staff*: Balkwell, Balswick, Barrow, Bates, Beck, Belcher, Conger, Cooper, Crumrine, Dean, Dowd, Eckenrode, Garbin, Horan, Jedlicka, D. Kelley, P. Kelly, Lee, Linden, Miller, Myers, Nix, Robinson, Schwartz, Shull, Tarver, Wallis.

Majors in sociology must have the following courses in addition to Sociology 105 (or 206H) unless specifically exempted by the department head: Sociology 356, 422, Anthropology 102, Statistics 200, two courses from the Subject Matter Core, two courses from the Special Areas, and two additional courses selected in consultation with a departmental advisor.

105. Introductory Sociology.
An introduction to the sociological analysis of society, its origins, structure, change and problems. Emphasis is on the nature of culture, social interaction, social groups and social institutions.

206H. Introductory Sociology (Honors).
Not open to students who have credit for Sociology 105. A general introduction to fundamental concepts, theories, methods and major subfields of sociology. Among other purposes will be that of showing the relationships of sociology to other fields of study.

Subject Matter Core

301. Structure and Functioning of American Society.
A functional analysis of major institutions and processes in contemporary American society.

373. (PSY) Social Psychology.
The social aspects of psychology; the origin and development of social behavior, interaction of individuals with groups, social motivation, suggestion, and attitudes. Methods of research in social psychology emphasizing experimental techniques.

409. Social Change.
The social process of social change; causes, types and theories of change.

411. Social Organization.
The study of a general model of the social system and the development of a consistent set of theories concerning the structure and process of groups and such complex systems of behavior as organizations, communities and societies.

412. Social Disorganization.
A study of the types, causes and consequences of social disorganization including its relationship with deviance.

427. Personality and Social Structure.
Foundation and development of personality; mechanisms of integration and adjustment; roles of culture, groups and language; concepts of self; types and theories of personality; divergent personalities.

433. Population Theory and Problems.
Theory and dynamics of population growth; population measure; migration; composition; differential fertility; theories of the quality and optimum population; economic and social aspects of our population.

434. Social Control.
A study of the processes by which collectivities attempt to produce conformity to norms and the consequences of these processes.

435. The Community.
A study of the community as a unit of social organization; contemporary trends in contemporary organization and planning.

443. The Mobility Experience.
Prerequisite: Sociology 442.
Examination of theories and findings on the structure of opportunities in society; the factors and processes that contribute to social mobility; and the social and personal consequences resulting from changes in status.

490. Seminar in Sociology.
A program of semi-independent study including reading, writing, and discussions on sociologically relevant topics of interest to the student.

495. Large Organizations.
Major approaches to the study of large organizations; theories of bureaucratic structure; relationship of personality to formal and informal structures.

Social Theory

300H. (POL) Social Political Theory (Honors Colloquium).
A study of some major theories concerning man's political, economic, educational, and religious institutions, emphasizing a cross social science disciplinary approach

421. Early Social Thought.
This course affords an introduction to social thought prior to the emergence of the modern social sciences.

422. Development of Sociological Theory.
A survey of some of the most important systems in the development of sociological theory. Required of all majors in sociology.

426. Modern Sociological Theory.
Prerequisite: Sociology 422.
A systematic analysis of the trends and developments in sociological theory since about 1920. Particular emphasis is placed on the current state of sociological theory and its relationship to empirical research.

471. (PHY) Philosophy of Social Sciences.
A study of the methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the Social Sciences.

Research Methods

356. Elementary Research Methods in Sociology.
Prerequisite: Statistics 200.
An introduction to scientific methods of social research.

401. Research Techniques in Small Groups.
This course is designed to familiarize students with methods and techniques peculiar to small group research. The class will replicate several of the classic experiments in small group research.

420. Methods of Social Research.
Prerequisite: Sociology 356, or permission of department.
Scientific methods of social research; considerations in research design; sources of data and data collection, qualitative and quantitative techniques for measurement, analysis and inference of social data.

456. Techniques of Population Analysis.
Techniques for analyzing the composition of the population, constructing life tables, measuring vital processes, and estimating population and migration.

559. Community Reconnaissance Methods.
Prerequisite: Sociology 435.
A study and application of methods of research in community organization for action programs. The application will include schedule preparation, field interviews, analysis of data, preparation of community reports.

Special Areas

260. Contemporary Social Problems.
A study of the problems of our times and their social and cultural causes and consequences. An introduction to both deviance and social disorganization are considered.

365. Social Gerontology.
An introduction to the study of aging through an interdisciplinary approach which utilizes the perspectives of sociology, psychology, economics, social welfare, and physiology.

393. (CFD) Family Relations.
Designed to assist students in preparation for marriage and family living. Personal development and family living, planning for marriage, achieving a happy marriage.

402. Structure and Functioning of American Society: Black Structure.
An analysis of Black institution in relation to contemporary society.

407. Juvenile Delinquency.
A detailed analysis of the nature, extent, and causes of juvenile deviance and delinquency with special emphasis on the handling of juveniles in the criminal justice system and on programs designed to treat or prevent delinquency.

410. Sociology of Medicine.
A sociological analysis of the interrelationship between illness and the social system. Special attention is given to health case organization.

429. Sociology of Religion.
An overview of religion as a social institution. The organization of religious groups, the integrative function of religion in social systems, and the influence of religious group membership on behavior in other institutional rareas.

431. Rural Social Systems.
An investigation into the characteristics and the organization of the rural population and their changes. Analysis of the social organization of agriculture and rural-urban relations will be emphasized.

432. The Sociology of Urban Life.
Development of the city as a social phenomenon in the modern world. Analysis of urban trends, characteristics, functions, and social organizations. Sociological elements in urban planning, housing and growth path patterns in new centers of urbanization.

437. Race Relations in the United States.
An examination of the social problems associated with race and race relations in contemporary American society.

442. American Stratification System.
Prerequisite: Sociology 105.
A systematic analysis of the nature of social status systems, including caste, estate, and class, and an examination of the form stratification differences take in the United States. Topics covered include: Perception of class distinctions, the factors of prestige and power, criteria of status evaluation, class effects on social relationships and differences in life styles, class and personality development.

451. Human Ecology and Social Structure.
A description of the ecological processes and the effects of technological change upon them. The study of the impact of this major branch of sociological theory upon recent developments in sociology.

452. Fertility of the Population.
Levels, trends, and differentials in fertility among various population groups; techniques and problems of measurement; and the social, psychological and biological aspects of human fertility.

453. Mortality of the Population.
Study of the levels, trends, and differentials of mortality and morbidity among various population groups. Special attention will be given to the role of social factors in health programs designed to reduce mortality.

454. Migration of the Population.
Study of internal and international population movements, urbanization of the population, analysis of migration stream, and techniques for analyzing migration rates. Also short-distance residential mobility will be examined.

457. Population Estimates and Projections.
A study of the most widely used procedures for estimating and projecting the population of states, counties, and other local areas. Evaluation of the accuracy of different estimation and projection methods.

461. (CFD) The Family.
Family study from many different angles, utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

465. Sociology of Aging.
This is a general course in the sociology of aging which will deal with the status of older people, their roles in the community and society, demographic aspects of aging, and the impact of aging upon society and social institutions.

480. Industrial Sociology.
A study of human relations in the industrial setting and the relationship of industrialization and the work environment to the worker, the community and the larger society.

481. Criminology.
The study of the nature, extent, and causes of criminal behavior. Focus will be on the criminal justice system; the police, the judiciary and corrections (probation, imprisonment, parole, work release, and half-way houses).

485. Sociology of Occupations.
A comparative study of work positions and roles in modern American society with emphasis given to such topics as occupational choice, socialization, worker adjustment, prestige, and mobility.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

502. Community development.
An analysis of social and cultural factors involved in programs for community development and change.

515. Seminar in Corrections.
Review of principles of correction; field observation and analysis of current practices; evaluation of observations and development of career potential in various aspects of criminal administration.

516. Special Projects in Applied Criminology.
Prerequisite: Sociology 481.
A readings seminar in which the student explores representative criminological literature with an emphasis on current writings.

521. Group Dynamics.
Prerequisite: Sociology major, senior standing; or graduate standing in sociology or related fields. The objectives of the course are to (1) increase understanding of the covert processes which may facilitate or hinder group development and work and (2) to gain a more effective way of thinking about group dynamics through a detailed study of concepts and models.

528. Sociology of Education.
Social perspectives on education: the society, the school, and the pupil.

SPEECH COMMUNICATION (SPC)

Head: Freshley. *Staff*: Gross, C. Gruner, M. Gruner, Hocking, Hutton, Leathers, Logue, Luchok, McGuire, Pence, Shiller, Torsey, Weider-Hatfield.

For the B.A. degree in Speech Communication, a student may choose one of four programs: (1) PUBLIC COMMUNICATION: required courses—108, 109, *or* 218H; a 200/300 level communication course; 350, 351, *or* 355; 459; a 400/500 level interpersonal course; and 20 hours of Advanced Public Communication courses; (2) INTERPERSONAL COMMUNICATION: required courses—109, 108, *or* 218H; two 200/300 level communication courses; 256; 520; a 400/500 level Public Communication course; and 20 hours of Advanced Interpersonal Communication courses; (3) COMBINED PUBLIC AND INTERPERSONAL COMMUNICATION MAJOR: required courses: 108, 109, *or* 218H; 200/300 level speech communication course; 459; 520; 10 hours of Advanced Public Communication courses; 10 hours of Advanced Interpersonal Communication courses; (4) GENERAL SPEECH COMMUNICATION WITH CERTIFICATION: Students desiring to gain certification to teach speech should contact the Department of Language Education for specific requirements.

108. Fundamentals of Speech Communication.
A first course in the fundamental principles of effective oral communication. Special attention is given to the selection and organization of materials, the presentation of speeches, and the development of an acceptable speaking voice.

109. (MAN) Interpersonal Communication.
Study of communication as it occurs in two-person and small group settings. Primary concern is given to understanding how an individual can use verbal and nonverbal communication to improve relationships and derive maximum social rewards. Emphasis is placed on student involvement in class exercises and discussions.

209. Phonetics.
Prerequisite: Speech Communication 108.
A study of the production of the sounds of English and their relation to the voice and diction improvement with emphasis on phonetic transcription.

210. Voice and Diction.
Course designed to aid the student in developing effective voice production, clear articulation, acceptable pronunciation, and pitch variation, rhythm and phrasing.

218H. Oral Communication as a Liberal Art.
This course deals with the evolution of the social theory, including the classical canons of invention, disposition, style, and delivery as applied to contemporary public address.

240. Parliamentary Procedure. 3 hours.
An introduction into the theory and practice of parliamentary procedure in a democratic society. Emphasis will be placed on the study of the rules of parliamentary law as well as practicing the application of these rules in business meetings.

250. Public Speaking.
Prerequisite: Speech Communication 108 or Speech Communication 109 or consent of instructor.
A study of the various forms of public address; practice in the preparation and delivery of several types of speeches.

256. (MAN) Discussion Methods.
Emphasizes student involvement in groups

working on socially significant projects of their own choice. Factors which affect quality of communication and group outcomes—interpersonal and task behaviors, leadership, norms, conflict resolution, and creativity—are examined.

267. Introductory Interviewing.
This course is designed to give the student experience in dealing with a number of types of dyadic communication situations. Transactions arising in ongoing relationships (e.g., parent-child, teacher-student, sibling pair), as well as temporary relationships (e.g., customer-salesperson) are examined.

324. Nonverbal Communication.
This course is designed to familiarize the student with the fundamental nature and functional importance of nonverbal communication in interpersonal interaction. Particular emphasis is placed on the potential of each system for attaining the individual's communicative objectives. Each student's capacity to transmit and perceive meanings nonverbally is tested and training provided for the development of this capacity. The student uses knowledge and experience gained from participation in class to diagnose and analyze communication problems most closely associated with nonverbal communication. The learning experience is heightened by the use of communication labs which concentrate on the different nonverbal communication systems.

328. Intercultural Communication.
This course introduces the student to the difficulties encountered when persons from different cultures communicate. Thus, the effect of culture upon communication is stressed. Simulations are used to provide the students with experience attempting to communicate across cultural barriers and stimulate development of skills for intercultural communication. Both theoretical and practical problems of intercultural communication are analyzed.

350. Argumentation and Debate.
Principles of logical proof as applied in argumentation and debate. Theory and practice in analysis, investigation, brief-making, refutation, evidence, forms of argument, fallacies, and debate procedures.

351. Persuasion.
Prerequisite: Speech Communication 108 or Speech Communication 109 or consent of instructor.
A study of the way in which beliefs, attitudes, values and behavior are formed and changed.

355. Studies in Black Rhetoric.
A study of the history and criticism of the communication of Black speakers, with emphasis upon oral rhetoric relating to social-political developments since 1860.

455. Rhetorical Criticism.
Prerequisite: Two senior division courses in speech communication or English.
An advanced course dealing with the study of rhetorical theory and criticism.

456. (MAN) Group Discussion and Conference Leadership.
Prerequisite: Two senior division courses in speech communication, business administration, education, or consent of instructor.
A study of the theory and techniques of group discussion with emphasis on current experimentation and research.

459. Foundations of Rhetorical Theory.
Prerequisite: Two senior division courses in speech communication or English.
A study of origin and development of rhetorical theory from ancient to modern times.

462. Communication Strategies in the Courtroom.
Prerequisite: Two upper division courses in Social Science, Journalism, or related areas.
This course examines modern communication theories and their application to legal proceedings.

463. Communication Strategies in Government.
Prerequisite: Two upper division courses in Social Sciences, Journalism, or related areas.
A study of communication strategies and activities in the executive and legislative branches of American government, with some emphasis on communication case studies.

464. Communication Strategies in Religion.
Prerequisite: Two upper division courses in Social Science, Journalism, or related areas.
A study of the theory and practice of communication in religious settings. Emphasis will be placed on communication within particular religious communities and communication from such groups to society generally.

465. Communication Strategies in Political Campaigns.
Prerequisite: Two upper division courses in Social Science, Journalism, or related areas.
The role communication plays in deciding which candidate will run for office, the nomination candidates, and the election of candidates to office.

466. (PSY) Psychology of Speech Communication.
Prerequisite: Two senior division courses in

speech communication, Psychology, or English.
A study of speech as a psychological phenomenon with consideration of the use of symbols, the speech personality, emotional reactions, and mental processes in speech communication, and psychological studies of language and vocal and visual symbolism.

467. (MAN) Interviewing.
Prerequisite: Junior or senior standing.
A study of modern communication theory and its application to interview situations.

469. Communication Strategies in Social Movements.
Prerequisite: Two upper division courses in Social Science, Journalism or related areas.
An examination of the rhetorical nature of social movements with theories of communication strategies applied in several case studies.

472. Communication Strategies in International Affairs.
Prerequisite: Two upper division courses in Social Science, Journalism or related areas.
A study of the communication strategies of nations in two focal areas. First, the intranational communications involved—such as Presidential speeches to the public and Congress; discussions by Cabinet members (e.g., before the Cuban Missile Crisis) or Congressional Committees (e.g., in Tonkin Resolution). Second, the strategies of nations communicating with each other in settings like the UN, the Munich Conference, and the Versailles Treaty negotiations. Attention will be given both to case studies and general principles or theories.

473. Classical Rhetoric.
Prerequisite: Two upper division courses in Social Science, Journalism or related areas.
A study of the development of classical rhetoric in the Greek and Roman periods, Plato to Quintilian.

478. Modern Rhetorical Theory.
Prerequisite: Two upper division courses in Social Science, Journalism or related areas.
A study of the development of rhetorical theory from 1700 to the present.

490. Special Topics.
Prerequisite: Two upper division courses in Social Science, Journalism or related areas.
Course to be taught in Speech Communication as an extension of present subject areas and in Speech Communication topics not covered by present curriculum.

496H, 497H, 498H. Independent Study and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

520. (JRL) Communication Theory.
Prerequisite: Psychology of Speech Communication or Journalism 101 and 203.
This course familiarizes the student with the fundamental nature of and problems in interpersonal and group communication. Communication is studied from the scientific perspective with emphasis on factors that measurably affect quality of communication. Students analyze communication situations of their own choice.

522. (JRL) Mass Communication and Persuasion.
An examination of approaches utilized to investigate mass communication as a persuasive process.

550. Teaching of Debate.
Prerequisite: Two or more senior division courses in speech communication or education.
Principles of argumentation and debate with emphasis on administration of the secondary school debate program.

551. Seminar in Quantitative Research in Speech Communication.
Prerequisite: Statistics 200 and two senior division courses in speech communication, sociology, psychology or consent of instructor.
Analysis of studies, design and execution of projects in persuasion.

593. (ESP) Speech Communication for the Elementary Teacher.
Prerequisite: Two senior division courses in speech communication, drama and/or elementary education.
A study of perception and creativity, with application to various speech activities for elementary school children.

596. (MAN) Organizational Communication.
Prerequisite: Senior standing.
Analysis of human communication patterns in organizations. Special attention to communication policies, procedures, and practices in administration. Examination of functions, philosophies methods, and characteristics of management communication.

STATISTICS AND COMPUTER SCIENCE (STA)

Head: Kossack. *Staff*: Bargmann, Canfield, Carmon, Chen, Cohen, Culver, Emigh, Hutcheson, Looney, Lyons, Penn, Wilson.

200. Elementary Statistics.
Prerequisite: Credit for or exemption from Mathematics 100.
A basic elementary course in statistics at a level which does not require a knowledge of calculus. See MS 312.

201. Introduction to Computer Science.
Prerequisite: Mathematics 116 or Statistics 200.
Scientific and commercial computations. Stored program concept. Number bases. Automata. Flow diagrams. Examples of compilars. FORTRAN, COBOL.

210H. Statistics and Computer Programming I (Honors).
Prerequisite: Credit for or exemption from Mathematics 100.
Statistical distributions and their uses, sampling theory, statistical decision-making, hypothesis testing, estimation, sample size determination.

211H. Statistics and Computer Programming II.
Prerequisite: Statistics 210H.
Regression and correlation, introduction to experimental design, sample survey design, statistical classification techniques.

221. Introduction to Statistics and Programming I.
Prerequisite: Credit for or exemption from Mathematics 100.
Statistical methods and FORTRAN programming, descriptive statistics, distribution models, sampling theory, testing statistical hypotheses, parameter estimation.

222. Introduction to Statistics and Programming II.
Prerequisite: Statistics 221.
Continuation of Statistics 221. Statistical decision-making regression and correlation, introduction to experimental design and analysis of variance, sample survey techniques.

321. Application of Computer Science in Natural Resource Management.
Prerequisite: Mathematics 253, Statistics 200.
An introductory course in basic computer science concepts and the application of computer technology to problems in natural resource management.

421. Statistical Methods I.
Prerequisite: Credit for or exemption from Mathematics 100.
Basic concepts of statistical models, sampling, variability in sample data, distributions, estimation of parameters, simple tests of significance, t-tests, analysis of variance, chi-square tests, and simple regression and correlation. Special sections for social scientists and biological scientists are provided. These sections are designated in the schedule of classes.

422. Statistical Methods II.
Prerequisite: Statistics 421.
Analysis of variance with multiple classification, covariance, multiple regression, multiple and partial correlation, elements of experimental design.

424. Sampling and Survey Methods.
Prerequisite: Statistics 421.
The design of sample survey, biases, variances and cost of estimators. Comparison of simple random sampling, ratio estimation, stratification, multi-stage, etc.

427. Least Squares Methods.
Prerequisite: Statistics 422 and Statistics 451.
Least squares using matrix notation. Techniques of matrix algebra and calculus applied to regression and experimental design.

431. Computer Programming I.
Prerequisite: Mathematics 116.
FORTRAN and assembler language programming for scientific application.

432. Computer Programming II.
Prerequisite: Statistics 431.
Systems programming. Special programs (CPS, RPG), data processing.

433. Introduction to Information Retrieval.
Prerequisite: Mathematics 254 and Statistics 431; corequisite: Statistics 432.
Formatted and unformatted files. File structuring. Retrieval programs and encoded and English text. List processing systems. Automatic translation. Computer-assisted instruction.

434. Numerical Methods for Scientific Computation I.
Prerequisite: Statistics 431 and Mathematics 256.
Principles for writing subroutines for mathematical computer programs including series solutions continued fractions, numerical quadrature, and interpolation.

435. Numerical Methods for Scientific Computation II.
Prerequisite: Statistics 434; corequisite: Mathematics 358 or 410.

Subroutines for general quadratures, differential equations, matrix calculations; conversational and real-time scientific programs.

436. Statistical Computation.
Prerequisite: Statistics 422 and 431.
Computer programs for data analysis, experimental design, discriminant analysis, factor analysis, statistical distributions.

437. Computer Programming Applications.
Prerequisite: Statistics 431; corequisite: Statistics 432.
COBOL and assembler language programming with applications in payroll, balance sheets, inventory control, warehousing, and scheduling problems.

451. Statistical Theory I.
Prerequisite: Mathematics 255 and an introductory course in statistics.
An introductory course in statistical theory.

452. Statistical Theory II.
Prerequisite: Statistics 451.
Continuation of 451.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500. Programming for Electronic Digital Computers.
Prerequisite: Credit for or exemption from Mathematics 100.
This course is intended to prepare students to use the electronic computers of the University of Georgia Computer Center. FORTRAN type programming.

501. Scientific Programming.
Prerequisite: Statistics 500.
Introduction to assembly language programming and computer operating systems, with emphasis on scientific applications.

503. Commercial Data Processing.
Prerequisite: Mathematics 204.
Programming electronic digital computers for commercial and business applications using the COBOL language.

ZOOLOGY (ZOO)

Head: Thompson. *Staff*: Agosin, Anderson, Auerbach, Avise, Asmussen, Barstow, Bernstein, Bryan, Case, Chin, Cosgrove, Coward, Damian, Gibbons, Giesy, Giles, Glasser, Golley, Hallam, Humphreys, Kent, Laerm, Lindsay, Mattingly, McGhee, Menzel, Meyer, Odum, Paffenhoffer, Papaconstantinou, Patel, Patten, Paulin, Pomeroy, Provost, Ritter, Scott, Smith, Taylor, Thomas, Wiegert.

No student will be allowed to take a senior division course in zoology unless he has a grade of 2.0 or above in all prerequisite courses.

212. Human Anatomy. Three lectures and one triple laboratory period.
Prerequisite: Biology 101, 102.
Systematic study of human anatomy at the cellular, tissue, and gross levels.

213. Human Physiology. Three lectures and one triple laboratory period.
Prerequisite: Biology 101, 102 and Chemistry III or equivalent.
Systematic study of the physiology of the human body.

225. Invertebrate Zoology. Three lectures and two double laboratory periods.
Prerequisite: Biology 102.
A survey of the invertebrate animals, their biology, structure, and relations to other animals.

226. Vertebrate Zoology. Three lectures and two double laboratory periods.
Prerequisite: Biology 102.
A study of the evolution, structure, physiology, population dynamics and ecology of vertebrate animals.

227. Elementary Physiology. Four lectures and one triple laboratory period.
Prerequisite: Biology 102 or equivalent.
A comparative study of physiological principles, including evolutionary and ecological factors in animal function.

300. Human Genetics and Development.
Prerequisite: Biology 102 or equivalent or permission of instructor. Not intended for major credit.
A survey of prenatal development, birth defects, and the foundation of human genetic disease.

350. Natural History of Vertebrates. Three lectures and two triple laboratory periods.
Prerequisite: Zoology 226 or equivalent.
An introduction to local vertebrate fauna with emphasis on behavior, life history, ecology and systematics.

355. Embryology. Three lectures and two double laboratory periods.
Prerequisite: Zoology 226 or equivalent.
An introduction to the development of vertebrates.

362. Microtechnique. 3 hours. One lecture and two triple laboratory periods.
Prerequisite: Permission of instructor.
Theory and practice in the processing of cells and tissues for microscopic examination.

390. General Physiology. Four lectures and one laboratory by arrangement.
Prerequisite: Permission of instructor.
An introduction to general physiological processes with laboratory emphasis on techniques.

402. Protozoology. Three lectures and two double laboratory periods.
Prerequisite: Zoology 225 or equivalent.
A study of the phylum *Protozoa* with emphasis on morphology, physiology, life histories and the role of protozoa in biological research.

403. Mammalogy. Three lectures and two double laboratory periods.
Prerequisite: Zoology 226 or equivalent.
A study of the taxonomy, distribution, ecology, and evolution of mammals with special emphasis on land mammals of the Southeast.

404. Herpetology. Three lectures and two double laboratory periods.
Prerequisite: Zoology 226 or equivalent or permission of instructor.
The evolution, ecology, behavior, structure and physiology of amphibians and reptiles.

405. Ichthyology. Three lectures and two double laboratory periods.
Prerequisite: Zoology 226 or equivalent.
A study of the taxonomy, distribution, ecology, and evolution of the marine and freshwater fishes of eastern North America.

406. Ornithology. Two lectures and three double laboratory periods.
Prerequisite: Zoology 226 or equivalent.
An introduction to the study of birds, emphasizing the identification, classification, life histories, and behavior of Georgia species.

407. Invertebrate Zoology I. One lecture and four double laboratory periods.
Prerequisite: Consent of instructor.
The morphology, taxonomy, phylogeny and general biology of the acoelomate and pseudocoelomate phyla.

408. Invertebrate Zoology II. One lecture and four double laboratory periods.
Prerequisite: Zoology 407 or consent of instructor.
The morphology, taxonomy, phylogeny and general biology of the coelomate phyla.

411. Cytogenetics. Three lectures and two double laboratory periods.
Prerequisite: Biology 320 or equivalent.
The behavior of chromosomes and their relationship to genetic concepts.

412. Ecological Genetics.
Prerequisite: Biology 320 and BIO 350.
Genetic diversity and variation in relation to the environment; the interplay between ecological and genetic processes within populations.

414. Population Genetics.
Prerequisite: Mathematics 254 and Biology 320, BIO 350, or consent of instructor.
The genetic structure of populations and the dynamics of genetic change within them.

415. Topics in Evolutionary Theory.
Prerequisite: BIO 320 or 350; or consent of instructor.
Theory and data pertaining to evolution of genetic systems, molecular evolution, coevolution, evolution of social behavior.

422. Animal Physiology. Four lectures and one double laboratory period.
Prerequisite: Biology 380 or ZOO 227 or consent of instructor.
The physiology of neural and humoral regulatory mechanisms.

423. Animal Physiology.
Prerequisite: Biology 300 or equivalent.
The physiology of nutrition, metabolism, circulation, transport, and excretion.

424. Vertebrate Physiology.
Prerequisite: Biology 300 or equivalent.
The environmental physiology of animals; osmotic and ionic regulation; temperature regulation; gas exchange.

431. (FRS) Aquatic Environments. Three lectures, two double laboratories, and field trips.
Prerequisite: FRS 330 or equivalent, or permission of instructor.
Study of organisms found in aquatic habitats, and factors which influence them.

450. Principles of Ecology.
Prerequisite: Permission of instructor.
A review of basic ecological principles with emphasis on the holistic concept of the totality of man and environment, especially as relevent to the problems of resources, population growth, agro-industrial development, and pollution.

460. Marine Ecology.
Prerequisite: Biology 350 or consent of instructor.

Ecological principles as exemplified by marine environments, organisms, populations, communities, and ecosystems.

472. Parasitology. Three lectures and two double laboratory periods.
Prerequisite: Zoology 225.
A comparative study of internal parasites of man and the lower animals.

484. Animal Histology. Two lectures and three double laboratory periods.
Prerequisite: Zoology 226 or equivalent.
A study of the tissues and their organization into organs and organ systems in animals.

485. Problems in Histology. Two lectures and three double lab periods.
Prerequisite: Zoology 362, 484 or equivalent.
Involves the development of an anlytical problem in histology and investigation of the problem with advanced techniques.

497ABC. Directed Reading 5 hours each; combined maximum of 20 hours for Zoology 497ABC, 498ABC.
Prerequisite: Permission of faculty supervisor and department head.
Detailed study under the direction of a faculty supervisor of a restricted area of zoology, through reading and discussion of original papers, reviews and monographs with the preparation of critical oral and written evaluations of the material read.

498ABC. Research. 5 hours each; combined maximum of 20 hours for Zoology 497ABC, 498ABC.
Prerequisite: 10 hours of senior division work in biological science and approval of department head.
Affords advanced students the opportunity to conduct independent laboratory research under direction of individual staff members.

499. Senior Seminar. 1 hours; maximum of 3 hours.
Prerequisite: Senior class standing and a major in zoology.
Preparation, oral presentation and discussion of reports of original research or of critical surveys of the technical literature under supervision of the departmental faculty. Required of all zoology majors.

THE COLLEGE OF BUSINESS ADMINISTRATION

ACCOUNTING (ACC)

Head: Windal. *Staff*: Abrams, Barrack, Benke, Corley, Davis, Dillon, Edwards, Engstrom, Grant, Heller, Henkel, Holt, Johnson, Leitch, O'Keefe, Reed, Roemmich, Warren.

110. Principles of Accounting I.
A study of fundamental Principles applicable to the accounting cycle, asset valuation, income determination, financial reporting, basic business taxes, and owner's equity.

111. Principles of Accounting II.
Prerequisite: Accounting 110.
Accounting principles and basic accounting theories as an aid to management. Cost accounting fundamentals. Analysis and interpretation of financial statements.

112H (110). Principles of Accounting I (Honors).
Underlying accounting concepts and standards utilized to communicate information essential to understanding the activities of an enterprise, including financial analysis, valuation and measurement, planning and control.

113H (111). Principles of Accounting II (Honors).
A continuation of 112H. Not open to students with credit for Accounting 111.

116. Survey of Accounting.
Not open to Business Administration Students.
A general survey of accounting with emphasis on the preparation, analysis, and interpretation of financial statements. A non-technical approach is taken in this study of accounting concepts and standards underlying financial reporting and their relevance to the public, private, and governmental segments of society.

270, 270L. The Legal Environment of Business.
2 hrs. lectures, 3 hrs. discussion.
Jurisprudence, the legal process, regulation of competition, consumerism. A study of patterns and processes of legal regulation.

280H (270). The Legal Environment of Business.
Not open to students with credit in ACC 270.
An honors study of the principles, trend and processes of legal influences and regulation upon business. Jurisprudence, the legal process, regulation of competition, consumerism.

Prerequisite 300 level courses: Junior standing.

316. (MAN) Introduction ot Business Data Processing Systems.
Prerequisite: MS 209 and Accounting 111 or 113H.
Electronic data processing, electronic data processing equipment, programming and processing procedures, systems analysis and design, and system control.

340. Business Practice. 5–15 hours.
Prerequisite: Permission of department.

353. Intermediate Accounting I.
Prerequisite: Accounting 111 or 113H, and grades of at least 2.0 in each of Accounting 110 and 111.
Financial accounting concepts and standards of financial statement preparation as related to current assets and current liabilities. Some emphasis is given to the accounting process.

354. Intermediate Accounting II.
Prerequisite: Accounting 353.
Financial accounting concepts and standards of financial statement preparation as related to long-term investments, tangible and intangible fixed assets, long-term liabilities, stockholders equity, and special areas of income determination.

355. Management Accounting.
Prerequisite: Accounting 111 or 116. Not open to accounting majors.

The uses of accounting data by management in planning, budgeting, and forecasting.

370. Business Law I.
Provides a basic appreciation of the relationships of law and society and the fundamental concepts encompassed by law as well as an investigation of contracts, Uniform Commercial Code sales and Antitrust Law.

380H (370). Business Law I (Honors).
An honors study of business crimes and torts, contracts, sales and negotiable instruments. Not open to students with credit in Accounting 370.

514. Cost Accounting.
Prerequisite: Accounting 353 or permission of department.
Emphasis is upon utilization of cost data in planning and controlling activities. Internal and external data are woven into the planning models. Specific areas are: process, job order, standard, functional relationships, and budgeting.

515. Income Taxation.
Prerequisite: Accounting 111 or Accounting 113H.
Federal Income Tax Law applicable to individuals and corporations (excluding reorganizations).

516. Advanced Cost Accounting.
Prerequisite: Accounting 514.
Emphasis on information systems, budgeting, cost-volume-profit analysis, and cost standards and variance analysis. Cost data are developed and fitted into various mathematical models including statistical analysis, linear algebra, and linear programming.

518. Governmental Accounting.
Prerequisite: Accounting 354.
Accounting problems and procedures pertaining to state and local governments and their institutions; governmental classification of receipts and expenditures; preparation of reports; budgeting and fund accounting.

519. Advanced Income Taxation.
Prerequisite: Accounting 515.
Continuation of Accounting 515 including partnerships, social security, estate and trust income taxes, estate tax, gift tax, and corporate reorganization.

521. (MAN) Introduction to Programming Systems.
Prerequisite: Accounting 316 or equivalent.
To develop an understanding of and an appreciation for financial information systems, with emphasis on electronic data processing.

522. Current Accounting Theory and Research.
Prerequisite: Accounting 354 and 514.
Current accounting theory with special emphasis on the determination of accounting standards. Current literature on reporting concepts and standards relating to specific current topics in theory is emphasized.

550. (MAN) Systems Analysis and Design.
See Management 550.

551. (MAN) Managing Business Data Processing Systems.
See Management 551.

556. Accounting Problems.
Prerequisite: Accounting 354.
Application of accounting theory to specialized accounting problems including partnership accounting, branch accounting, consolidated statements, installment sales, consignments, and governmental accounting.

572. Auditing Principles.
Prerequisite: Accounting 354 and 514.
Objectives, standards, and procedures involved in examining and reporting on financial statements of business organizations by independent auditors.

573. Auditing Problems.
Prerequisite: Accounting 572.
Application to auditing theories and principles to audit problems with emphasis upon preparation of audit working papers and reports.

576. Business Law II.
Prerequisite: Accounting 370 or permission of department.
Business organization, property, bankruptcy, secured transactions and commercial paper.

579. Functions of the Controller.
Prerequisite: Accounting 514, or Accounting 355 and permission of department.
Principles and functions of the controller and his office; forecasting; budget preparation; analysis of cost variances and allocation of responsibility; probability and linear programming applications.

599. Business Policy—Accounting.
Prerequisite: Senior standing.
Seeks to integrate the techniques, methods, and knowledge from all areas of business administration into a meaningful whole. Problems of setting policies which enable the firm to accomplish its objectives will be studied. This course is designed for final quarter seniors.

BANKING AND FINANCE (FIN)

Head: Verbrugge. *Staff*: Beranek, Billings, Black, Clement, Fortson, Hanna, Harvey, Hilliard, Hunter, Legler, Lloyd, Masten, Selby, Sinkey, Timberlake.

Prerequisite all courses: Junior standing.

326. (ECN) Money and Banking.
Prerequisite: Economics 105 or permission of instructor. Money in the economic organization; monetary theory; methods of stabilizing the price level; theories of bank deposits; discount policy and the interest rate of central banks regulation of credit.

330. Business Finance.
Prerequisite: Accounting 110.
Financial promotion and organization of the business firm; problems of financial administration.

336H (326). Money and Banking (Honors).
Money in the economic organization; monetary theory; methods of stabilizing the price level; theories of bank deposits; discount policy and the interest rate of central banks regulation of credit. Not open to students with credit in Finance 326.

337H (330). Business Finance (Honors).
Prerequisite: Accounting 110.
This course is designed to acquaint the student with the analytical tools of finance. The honors course emphasizes analysis as opposed to description. Not open to students with credit in Finance 330.

340. Business Practice. 5–15 hours elective credit.

341. (ECN/MAN) Environment of International Business.
Prerequisite: Nine hours of economics or consent of instructor.
Introduction to the economic environment surrounding multi-national business operations. Special attention is given to theories, problems, and policies of the world monetary system, international trade, and foreign investment.

430. Corporate Financial Policy.
Prerequisite: Finance 330.
Analysis of financial problems and policies of corporations.

431. Investments.
Elements of investments; examination and testing of specific investment securities.

432. Investment Management.
Prerequisite: Finance 330 or permission of instructor.
Considers alternative basic approaches to management of common stock and fixed-income security portfolios.

434. (ECN) Public Finance.
A general consideration to American public expenditures, revenues, and fiscal administration.

435. (ECN) State and Local Public Finance.
Revenues, expenditures, and fiscal administration of Georgia and its political subdivisions; fiscal comparisons of Georgia with other states, and an anlysis of intergovernmental tax relationships.

439. Financial Planning and Control.
Prerequisite: Finance 430 or equivalent or permission of instructor.
A survey of theory and procedures involved in the development and operation of financial plans and financial control to aid in the administration of commercial and industrial enterprises.

450. (ECN) Monetary Policy.
Prerequisite: Finance 326.
Monetary theory and how it affects monetary policy; objectives; techniques, and problems involved; Treasury fiscal and debt management policies as they affect and are affected by Federal Reserve policy.

451. Commercial Banking.
The theory of commercial banking; and the concept of bank asset management; the relationship of asset management to liquidity; commercial banking and the nation's credit structure.

452. The American Financial System.
The function, role, and management of the major types of financial institutions in the United States. Emphasis is on the flow of funds through the specializied financial market sectors.

469. (ECN) National Income Accounting.
Prerequisite: Finance 326.
Concepts, statistical sources, and uses of the national income and wealth accounts; relationships to input-output and money flow analysis. This course is cross-listed as Economics.

481. (ECN) International Finance: Theory and Policy.
Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy. This course is cross-listed as Economics.

487. (AEC/MKT) Commodity Markets.
Prerequisite: Finance 330, or permission of instructor.
Development, organization, and importance of commodity markets; governmental and international regulations and controls; organizations and functions of commodity exchanges.

488. Security Analysis.
Prerequisite: Finance 330 or permission of instructor.
The tools of security analysis are developed and applied to improve critical judgment in the appraisal and selection of securities.

510. (RE) Real Estate Finance.
See Real Estate 510.

599. Business Policy.
Prerequisite: Senior standing.
This course seeks to integrate the concepts, techniques, and knowledge of all areas of business administration. Problems of setting policies which enable firms to accomplish its objectives are studied. This course is designed for final quarter seniors.

ECONOMICS (ECN)

Head: Kamerschen. *Staff*: Allsbrook, Andrew, Beadles, Danielsen, DeLorme, Gilliam, Green, Hayakawa, Hill, Kelly, Miller, Niemi, Rubin, Sheer, Sushka, White, Wood.

Students may major in economics in either the Franklin College of Arts and Sciences or the College of Business Administration. A.B. students majoring in economics and seeking advising should go to the Economics Department in Room 101, the College of Business Administration Building (Brooks Hall).

Economics 105 and 106 are prerequisites for all other economics courses except 545 and 546.

Prerequisite all 300 level courses: Junior standing.

105. Principles of Economics.
Income, employment and other macroeconomic theory with applications to current economic problems.

106. Problems of Economics.
Introduction to the price and market system with applications of microeconomic theory to current economic problems.

115H. Principles of Economics (Honors).
Income, employment, and other macroeconomic theory with applications to current economic problems.

116H. Principles of Economics II (Honors).
Introduction to the price and market system with applications of microeconomic theory to current economic problems. Not open to students with credit for Economics 106.

133. Economic Development of the United States.
American economic development from the colonial period to the present; economic factors involved in industrial growth and the resulting economic problems.

134. Economic Development of Europe.
Development of the economic aspects of civilization in medieval and modern times; evolution of economic institutions; historical background of present economic problems.

143H (133). Economic Development of the United States (Honors).
American economic development from the colonial period to the present; economic factors involved in industrial growth and the resulting economic problems. Not open to students with credit in Economics 133.

326. (FIN) Money and Banking.
See Finance 326.

336H (326). (FIN) Money and Banking.
See Finance 336H.

341. (MAN/FIN) Environment of International Business.
Prerequisite: Nine hours of economics or consent of instructor.
Introduction to the economic environment surrounding multi-national business operations. Special attention is given to theories, problems, and policies of the world monetary system, international trade, and foreign investment. Not open for major credit to students in economics and finance.

386. Labor Economics (Honors).
Survey of labor organizations, wages, hours, unemployment, labor legislation and current developments in labor. Tools of economic analysis are utilized.

396H (386). Labor Economics.
Survey of labor organization wages, hours, unemployment, labor legislation and current developments in labor. Not open to students with credit in Economics 386.

401. The Economics of Poverty.
An economic analysis of the causes of poverty; the amount of poverty in contemporary U.S. society; spending patterns of the poor; the effects of discrimination; the economics of the welfare system, the negative income tax, and other pro-

posed remedies for poverty. (Not open for major credit to students in economics and finance.)

402. Economics of Natural and Environmental Resources.
An analysis of the economic and physical principles underlying the use of our natural resource base. The economic sources of environmental problems will be examined as well as policies put forth to correct these problems.

405. Intermediate Micro-Economic Theory.
Economic theory of households and firms, determination of prices and allocation of resources.

406. Intermediate Macro-Economic Theory.
National income accounting and theory. Determination of national income, employment, price level, and growth.

410. Economic Growth and Development.
Problems and programs of economic growth; specific attention directed to underdeveloped areas, national economics, and regions. International agencies and coordinated efforts in economic development processes will be appraised within a theoretical reference.

434. (FIN) Public Finance.
See Finance 434.

435. (FIN) State and Local Public Finance.
See Finance 435.

436. Business Fluctuations.
Economic and social significance of business conditions analysis in an advanced, industrial, and urban economy; causes of fluctuations in economic flow; measures for controlling business fluctuations through integration of firm (micro) with income-employment (macro) theory; introduction to business forecasting.

437. Comparative Economic Systems.
Analysis and appraisal of the theories underlying economic systems; proposed and existing schemes with respect to the maintenance of full employment; distribution of income, and encouragement of progress.

447. Private Enterprise and Public Policy.
The structure and performance of American industry; concentration and dispersion in the business structure; the workability of competition in the dispersed industries; local markets and allegedly inadequate competition; the workability of competition in concentrated industries; implications for public policy.

448. Public Utilities, Public Regulation, and Public Enterprise.
Economic and philosophic bases for government regulation and ownership; development characteristics, rights, and duties of regulated industries; problems of regulation and rates; service; securities; activities of the Federal government in power, transportation, atomic energy and other fields.

449. Government and Business.
Economic bases and guidelines for government intervention; the policy of maintaining competition; role of anti-trust policy in a private enterprise economy; character and limitation of the law; the law emerges, 1890–1911; anti-trust law and restrictive agreements; the law and monopoly; the regulation of competitive practice; appraisal of anti-trust.

450. (FIN) Monetary Policy.
See Finance 450.

469. (FIN) National Income Accounting.
Prerequisite: Finance 326.
Concepts, statistical sources, and uses of the national income and wealth accounts; relationships to input-output and money flow analysis. This course is cross-listed as Finance.

480. International Trade: Theory and Policy.
Theoretical analysis, historical survey and current problems of international trade; an examination of international economic policies and institutions especially as they relate to national political and economic objectives; trade barriers and controls.

481. (FIN) International Finance: Theory and Policy.
Prerequisite: Finance 326.
Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy.

489. The Labor Movement.
Prerequisite: Economics 386.
Historical background of modern industrial relations; economic, social and political forces contributing to the current problems in labor economics.

490. (MAN) Labor Legislation.
Prerequisite: Economics 386.
An economic analysis of the problems and issues arising out of the legislative and judicial efforts to define the rights, duties and responsibilities of labor organizations and management in the field of industrial relations.

491. (MAN) Collective Bargaining.
The collective bargaining process with special reference to economic implications.

493. Industrial Relations Systems.
Prerequisite: Economics 386.

The study of the growth, development, and economic import of labor movements in selected countries.

494. Labor Market Analysis.
Prerequisite: Economics 386.
A presentation of current theories, recent empirical investigations and historical and current data source materials in the area of labor supply at the local, state, regional, and national levels. The course will focus upon (1) evaluation of the quality and quantity of the labor resource available to a labor market; (2) application of labor market data by firms and government agencies; and (3) the role of the labor resource in explaining the South's regional position in the national economic setting.

495. Economics of Population.
Economics and social results from population change, particularly with respect to economic opportunities, employment, investment, international trade, and economic development; explanation and forecasting of population trends.

496. (MAN) Managerial Economics.
See Management 496.

496H. Independent Reading and / or Projects.

497. Economic Evolution of the United States.
Economic evolution of the United States emphasizes use of tools of quantitative and qualitative analysis as applied to American economic evolution.

497H. Independent Reading and / or Projects.

498H. Independent Reading and / or Projects.

499. Quantitative Analysis for Economists.
Prerequisite: Economics 312.
The general linear correlation model is developed and the inferences that can be drawn from the model are discussed.

499H. Honors Thesis.

545. Contemporary Economics for Non-Majors I.
Prerequisite: Upper division standing or permission of instructor.
Employment theory. Emphasis is placed upon recent development and varying points of view in contemporary economics. May not be counted as part of a degree program in economics or business administration.

546. Contemporary Economics for Non-Majors II.
Prerequisite: 545.
Price theory. Emphasis is placed on recent developments and varying points of view in contemporary economics. May not be counted as part of a degree program in economics or business administration.

599. Business Policy—Economics.
Prerequisite: Senior standing.
This course seeks to integrate the concepts, techniques, and knowledge of all areas of business administration. Problems of setting policies which enable the business firm to accomplish its objectives are studied. This course is designed for final quarter seniors.

MANAGEMENT (MAN)

Head: Huseman. *Staff*: Carroll, Finn, Gatewood, Glueck, Greenwood, Hatfield, Kagerer, Kefalas, Lahiff, Ledvinka, Mehra, Pearson, Sanborn, Scott, Shull, Smith, Tate, Thrasher, Watson, White.

Prerequisite: Management 351, Management and Organization Behavior, is a prerequisite for all management department courses numbere 300 or above with the exception of Management 320, Operations Analysis. Management 362H, Principles of Organization and Management (Honors), may be taken in lieu of MAN 351.

109. (SPC) Interpersonal Communication.
Study of communication as it occurs in two-person and small group settings. Primary concern is given to understanding how an individual can use verbal and nonverbal communication to improve relationships and derive maximum social rewards. Emphasis is placed on student involvement in class exercises and discussions.

201. Introduction to Organizational Communication.
This course is an examination of communication within the organizational context. Students are introduced to organizational communication through a variety of reading assignments, case studies, and lecture/discussion sessions that deal with various aspects of organizational communication.

202. Introduction to Interpersonal Communication.
This course concentrates on interpersonal communication by considering such topics as the communication process, non-verbal communication and interviewing. During the course, students are exposed to varous reading and lecture/discussion sessions. Each student will participate in some type of face-to-face communication situation two times during the course. While the student is exposed to theoretical considerations, the major thrust of the course is

involving the student in interpersonal communication situations.

256. (SPC) Discussion Methods.
Study of group process, interpersonal relations, and leadership in the small group, conferences, and public forum, with emphasis on practice in various types of public discussion, with materials drawn from current issues.

316. (ACC) Introduction of Business Data Processing Systems.
See Accounting 316.

320. Operations Analysis. 4 hours. Four lectures or recitations.
Prerequisite: Management Science 312.
The major thrust of this course is the application of mathmatical, statistical and computer science techniques to operations problems. The applications are largely applicable to the production environment but not exclusively so. Topics include mathematical programming, optimization models, Monte Carlo methods, control charts and network analysis.

340. Business Practice. 1–15 hours.
Prerequisite: Permission of department.
Students are permitted to enter business establishments for the purpose of obtaining practical experience. The period of absence is limited to one quarter. A second option involves consulting with businessmen in the Athens area including problem analysis and solution. Students selecting this latter option need not be absent from the campus.

341. (ECN/FIN) Environment of International Business.
See Economics 341.

351. Management and Organizational Behavior.
Prerequisite: junior standing.
Analysis of management functions and processes as applied to organizations, includes fundamentals of staff and operative management, management principles and techniques, application of techniques to specific fields. Study of human behavior in organizations, with emphasis on problems of organization structure, authority and responsibility, motivation and leadership. Particular attention will be given to motivation, authority relationships, and organization structure as their interactions with behavior processes make efficiency more or less difficult to achieve.

352. Industrial Operations.
The general organization and management of an industrial plant. Process analysis, plant location, plant layout, purchasing, personnel relations, union-management relations, human factor analysis, wage administration, job evaluation and work improvement.

362H. Principles of Organization and Management (Honors).
This course is concerned with providing the academically talented students with the basics of the principles of management and, in addition, to provide them with the opportunity to familiarize themselves with the manner by which the management process has evolved. It is considered essential that people of this classification be provided experiences that will give them an expanded perception of the subject. Not open to students with credit for Management 351.

401. Conceptual Foundations of Business.
Examination of the intellectual, cultural, and legal concepts underlying the business system. Relationships of business systems to modern industrial society.

456. (SPC) Group Discussion and Conference Leadership.
Prerequisite: Two senior division courses in business administration, speech communication or education or consent of instructor.
A study of the theory and techniques of group discussion with emphasis on current experimentation and research. Conference planning and participation and conference leadership techniques are included.

467. (SPC) Interviewing.
A review of various theories of interpersonal communication and of pertinent research in the area of interviewing. Application of modern communication theory to interview situations. A consideration of the various types of interviews and the problems unique to each type with a variety of teaching techniques employed.

490. (ECN) Labor Legisltation.
See Economics 490.

496. (ECN) Managerial Economics.
Concepts, tools and methods of economic analysis relevant to a broad cross section of decisions within the business firm; analysis of market demand, cost relevant to various decisions; capital budgeting; and interrelationships between price policy, costs, promotion outlays, operating rates, capital budgets and financing in the short and long run.

521. (ACC) Introduction to Programming Systems.
See Accounting 521.

540. Business and Society.
A study of the major facets of the American business system in their historical and social background; growth of corporate capitalism and in-

dustrial state and business institutions in their interaction with cultural and social environment.

541. Computers and Management.
Prerequisite: Management Science 312.
This course stresses computer applications—both routine data processing and computer-assisted decision making. It also explores the computer's impact upon the organization and the management group.

550. (ACC) Systems Analysis and Design.
Introduction to general systems theory, its historical development and application. Methods of system analysis including operations analysis, configuration studies, feasibility studies, and trade-off analysis. Phases in development of large-scale man-machine systems.

551. (ACC) Managing Business Data Processing Systems.
Information processing in business (generation of information, processing and use); information economics; information management; management systems; systems design; environment of management systems.

552. International Business Policy.
Examination of some of the major problems that confront a manager who operates across international boundaries from a base in a single country, or who maintains affiliates and subsidiaries in several national jurisdictions, the greater emphasis being on problems involved in the crossing of national boundaries.

553. Production Planning and Quality Control.
Prerequisite: Management 320.
An examination of current production planning and controlling techniques. The course content includes investment decision models, work study, forecasting models, PERT-CPM analysis, inventory models, acceptance sampling, control charts and maintenance models.

554. Small Business Management.
This course is designed to acquaint the student with the aggregation of activities that are involved in the planning, establishing/entering a small business, and in the management of a small business enterprise. Special consideration will be given to the feasibility and the preparation of a plan of action for entering a new business or for entering an established business.

575. Management of Business Research Programs.
Prerequisite: Senior standing.
Organization and financial management of business research programs so as to achieve the benefits of innovations and creativity in the business firms. Case histories of successful and unsuccessful research programs by business firms will be examined, as well as the environment in which business innovation has to live. Special attention will be given to problems of managing research personnel.

582. (PSY) Personnel Measurement.
Prerequisite: Management Science 312 or Psychology 200.
A study of quantitiative methods and research models applicable to the measurement of personnel and their work behavior in organizations. Emphasis will be on the use of research methods and results to cope with personnel problems in organizations.

585. Personnel Administration.
The principles and practices in the field of the administration of human relations in industry. Emphasis is given to scientific techniques and devices in the development of a well-rounded personnel program.

586. (PSY) Wage and Salary Administration.
A study of job evaluation and other procedures that lead to the development of a sound wage and salary structure; problems of administration, executive compensation, financial incentives, and benefits.

588. (PSY) Personnel Selection and Placement.
Prerequisite: Management 582 or permission of instructor.
A study of methods applicable to the development of valid standards of personnel selection and placement with the use of psychological tests, the personal interview, and other kinds of personal data.

589. Management of Human Resources.
A study of human resources problems and management responses, with particular emphasis on the hard-to-employ worker and government regulation of personnel practices.

592. Problems in Human Resource Utilization.
A treatment of selected areas of current concern regarding the utilization of human resources.

594. Manpower Planning and Utilization.
A study of the process of manpower planning and utilization in organizations: manpower forecasting, recruiting, employee training, development and use of skills inventories, and related governmental programs and activities.

595. Administrative Practices.
A study of concepts and research findings pertaining to individual and group behavior in organizations; nature and crucial importance of communications, employee motivations and group dynamics; development of greater effectiveness in organizations through a better un-

derstanding of managerial philosophies, procedures and techniques.

596. (SPC) Organizational Communication.
Prerequisite: Senior standing.
Analysis of human communication patterns in organizations. Special attention to communication policies, procedures, and practices in administration. Examination of functions, philosophies, methods, and characteristics of management communication.

597. Organization Theory.
Analytical study of theories of organization and the factors affecting the functioning of organizations in different situations. Focus will be on the implications of theories and research findings in the design and management of organizations.

598. Research in Administration.
Prerequisite: Senior standing.
A study of research methodology with major emphasis on the function and design of administrative research, techniques of data-gathering and data analysis as well as reporting and utilization of findings.

599. Business Policy.
Prerequisite: Senior standing.
Building upon and integrating the knowledge and methods learned in the major fields in business administration, designed to develop analytical, problem-solving and decision-making skills in situations dealing with the firm as a whole. This course is designed for final quarter seniors.

MANAGEMENT SCIENCES (MS)

Head: Leverett. *Staff*: Davis, Hilliard, Leitch, McKeown, Neter, Ross, Sinha, Watson, Whitten.

209. Introduction to Computers in Business.
An introduction to computers and the use of computers in a business environment. This course is intended to prepare the student to use the computer. FORTRAN language is taught.

219H (209). Introduction to Computers in Business (Honors).
This course offers an opportunity for intensive examination of the use of computers in a business environment. Emphasis is placed on the study of information systems and the FORTRAN computer language. Students have the opportunity to run computer programs in both batch and real-time modes. Not open to students with credit in Management Sciences 209.

312. Statistical Analysis for Business.
Prerequisite: Management Sciences 209 and Mathematics 204 or equivalent.
Introduction to the application of statistics to business. Descriptive statistics, statistical inferences, simple regression and time series analysis. This course must be completed prior to receiving credit for a mjaor course; however, it may be concurrently scheduled with the first scheduled major course. Students may not receive credit for both Management Sciences 312 and STA 200. Management Sciences 312 is required of all BBA degree candidates unless an equivalent course was completed prior to a student's transfer into the BBA program.

322H (312). Statistical Analysis for Business (Honors).
Prerequisite: Management Sciences 209 and Mathematics 204 or equivalent.
This course offers an opportunity for more intensive examination of the theory and application of statistical measures. Inference, including hypothesis testing, is emphasized. Students become familiar with important statistical works and are introduced to such concepts as variance analysis, and multiple and partial correlation. Not open to students with credit in Management Sciences 312.

500. Survey of Operations Research.
Prerequisite: Management 320.
An introduction to the use of operations research techniques in solving business problems. Linear programming, queuing theory, simulation and stochastic models are examined.

505. Introductory Business Systems Simulation.
Prerequisite: Management Sciences 312.
Introduction to the building and use of simulation models in business. Coverage includes random number and process generators, construction and validation of simulation models and model implementation.

532. Business Forecasting Methods.
Prerequisite: Management Sciences 312.
Introduction to the methods and application of forecasting techniques commonly used in business. Techniques such as moving averages, exponential smoothing, regression analysis, time series analysis and Box-Jenkins methods are surveyed. Emphasis is on implementation through relevant projects.

MARKETING (MKT)

Head: Reynolds. *Staff*: Barksdale, Cavinato, Crask, English, French, Huszagh, Rucker, Rogers, Still, Vann.

340. Business Practice. 1–15 hours.
Prerequisite: Three years of college work leading to a B.B.A. degree.
A few marketing students are permitted in their senior year to enter business establishments for the purpose of obtaining practical marketing experience. The period of absence is limited to one quarter.

360. Principles of Marketing.
Prerequisite: Junior standing.
This course is concerned with the estimation of demand, consumer buying behavior, adaptation of products to markets, selection of channels of distribution, sales management, advertising, pricing, measurement of marketing efficiency, and procedures for planning and controlling marketing operations. The economic, social, and political forces that constantly change the market environment are stressed.

369H (360). Principles of Marketing (Honors).
Examines marketing methods, concepts, and practices. Problems are used to investigate decision-making processes and illustrate the administration and management of marketing operations. Not open to students with credit for Marketing 360.

463. (GGY) Geography of Transportation.
See Geography 463.

465. Marketing Research and Analysis.
Prerequisite: Marketing 360, Management Sciences 312.
Study of the role of research in marketing decision-making; the research process; scientific method; information gathering techniques; analysis and interpretation of research finding.

475. Marketing Decision-Making Techniques.
Prerequisite: Marketing 360 and Quantitative Methods 312.
The application of analytical techniques in marketing. Illustrates the use of quantitative methods in product planning, promotion, physical distribution, and pricing.

487. (AEC/FIN) Commodities Markets.
See Agricultural Economics 487.

558. International Marketing.
Prerequisite: Marketing 360.
A study of international marketing and the cultivation of international markets by business enterprises. Emphasis is placed on formulating international marketing plans and their implementation.

559. Principles of Transportation.
Prerequisite: Marketing 360.
A survey of rail, motor, water, air, and pipeline transport. The different forms of transportation are analyzed in terms of services rendered, costs, labor relations, prices, and issues in national transport policy.

560. Principles of Retailing.
Prerequisite: Marketing 360.
The basic concepts and analytical tools of retailing; types of organizational structure; store location; personnel; merchandising; promotion; services; and control techniques.

561. (PSY) Behavioral Theory and Marketing.
Prerequisite: Marketing 360.
This course deals with the motives, attitudes, and expectations of consumers and businessmen that contribute to an understanding of the marketing process.

563. Advertising.
Prerequisite: Marketing 360.
The management of advertising activities in the business organization; advertising agency operation; media evaluation and selection; creative strategy; and campaign planning.

564. Sales Management.
Prerequisite: Marketing 360.
A study of sales force management. Topics covered include: selecting, training, compensating, motivating, and evaluating salespersonnel.

565. Retail Administration and Policy.
Prerequisite: Marketing 560.
The analysis and solution of retail problems; integration of retailing functions; development of policies for managing these functions.

567. Marketing Promotion: Personal and Nonpersonal Selling.
Prerequisite: Marketing 360.
The nature and scope of selling activities, especially salesmanship and sales promotion. Promotional theory, problems and strategies are emphasized; legal, ethical and moral implications of promotion are considered as well.

568. Motor Transportation.
Prerequisite: Marketing 559.
Management problems of motor carrier enterprise and other modes. Their organization, operations, pricing and marketing, financing, and public policy issues.

569. Physical Distribution.
Prerequisite: Marketing 360.
Functions relating to the buying and selling of transport service: inventory control, packaging, storage, scheduling, information flows and location analysis; coordination with other functions of the business organization to reduce total distribution of costs of an organization.

571. Marketing Strategy.
Prerequisite: Marketing 360.
This course covers the integration and coordination of product development, promotional strategy, physical distribution, and pricing in planning and controlling marketing operations. Stress is placed upon the managerial aspects of marketing.

580. Current Transportation Problems.
Prerequisite: Marketing 559.
The place of transport in our system so far as it is determined by economic, business, governmental, and social requirements. A study of the development of regulation of transport with particular interest in the social aspects.

584. Measurement of Promotional Effectiveness.
Prerequisite: Marketing 465 or permission of instructor.
Examines the effects of promotion on consumer decisions. Provides a systematic examination of methods used in evaluating the effectiveness of advertising, personnel selling, sales promotion, and publicity.

590. Location Decisions in Marketing.
Prerequisite: Marketing 360.
Examines theories of spatial relationships that influence marketing processes and demonstrates the use of these concepts in retailing, wholesaling, physical distribution, and marketing management.

599. Business Policy—Marketing.
Prerequisite: Senior standing.
Integrates the concepts, techniques, and knowledge of all areas of business administration. Problems of setting policies which enable the business firm to accomplish its objectives are studied.

REAL ESTATE AND URBAN DEVELOPMENT (RE)

Head: Floyd. *Staff*: Haney, Isakson, Kau, Miller, Shenkel, Wendt.

Prerequisite all courses: Junior standing.

340. Business Practice (elective credit only.)
Prerequisite: Permission of the instructor.
This course is offered by special arrangement with Georgia business and government agencies. The student works under close supervision of faculty and his employer on a selected term project. Completion of this course results in 5–15 hours credit, depending on individual circumstances.

390. Urban Land Principles.
A survey of the changing pattern of urban development; the structure of the real estate market, and characteristics of real estate resources. Real estate financing methods, introductory valuation principles, location analysis, city structure and land use practices. Prerequisite for all other real estate courses.

391. Real Estate Brokerage.
Prerequisite: Real Estate 390 or consent of instructor.
Broker-agency regulations, duties of the broker and his employees are part of the management topics covered in this course. Methods of operating a real estate brokerage office including subdividing techniques, listing agreements, closing statements and real estate instruments constitute a major part of this course. Syndications and tax free exchanges are included as case work assignments.

392. Real Estate Management.
Prerequisite: Real Estate 390 or consent of instructor.
Real property management, including the management of urban redevelopment projects, tenant selection and characteristics of residential leases are among topics covered in this course. Cooperative apartments, condominiums, commercial leases, office and apartment building analysis represent the main topics of study. Syndications and corporate management are compared to proprietary ownership. Methods of analyzing real estate operating statements for management decisions are also introduced.

508. Principles of Valuation.
Prerequisite: Real Estate 390 or consent of instructor.
An introductory valuation course, the subject matter deals mainly with the logic of valuation theory. Study material covers conventional valuation techniques in addition to new valuation methods introduced by statistical inference and computer terminal models adapted to investment property. Case problems use computer models developed for decision-making purposes.

509. Income Property Valuation.
Prerequisite: Real Estate 390 and 508 or consent of instructor.
The main emphasis in this course rests on equity capitalization of income properties. Advanced methods of appraisal, resting heavily on computer terminal models, complements a study of cash flow methods appropriate to real estate investment. Students supplement textbooks and

reserve reading with the study of selected properties analyzed by computer.

510. (FIN) Real Estate Finance.
Prerequisite: Real Estate 390 or consent of instructor.
A study of the instruments, techniques, and institutions of real estate finance; sources of funds; mortgage risk analysis; emphasis on typical policies and procedures used in financing of residential, industrial, and commercial properties, including commercial leasing.

512. Urban and Regional Development.
Prerequisite: Real Estate 390 or consent of instructor.
This course identifies and analyzes the major forces that shape the development of regions. Regional development is viewed primarily in terms of changes in the level, distribution, and stability of regional income and employment. The last part of the course analyzes several contemporary, intra-urban problems: pollution, transportation, local public services and political fragmentation.

520. Housing Markets.
Prerequisite: Real Estate 390 or consent of instructor.
Emphasis is placed on the analysis of housing markets: the supply of and the demand for housing. Contemporary issues include blight and renewal, minority housing markets, urban sprawl, the relationship of property taxes to housing conditions.

590. Problems in Real Estate.
Prerequisite: 10 hours of real estate courses, including Real Estate 390.
Individual study of the economics of urban land use in metropolitan areas; city planning; farm and rural land economics; industrial real estate practice and industrial property development. Assigned study projects and field trips.

599. Business Policy—Real Estate.
Prerequisite: Senior standing.
This course integrates the concepts, techniques, and knowledge of all areas of business administration. Problems of setting policies which enable the business firm to accomplish its objectives are studied. This course emphasizes case book materials, field research and library references combined with seminar interaction with a faculty leader. This course is designed for final quarter seniors.

RISK MANAGEMENT, INSURANCE, AND MANAGEMENT SCIENCES (INS)

Head: Leverett. *Staff*: Cobb, Greene, Johnson, Treischmann.

Prerequisite all courses: Junior standing.

340. Business Practice 5–15 hours.
A few selected students who are within 55 hours of graduation are permitted to enter business firms for the purpose of obtaining practical experience. The period of absence is limited to one quarter.

381. Principles of Risk and Insurance.
Introduction to the basic principles of life, property, liability and other areas of insurance from the viewpoint of the purchaser. Consideration is given to the importance of risk bearing in personal and business affairs and the various methods of handling risk with emphasis on insurance arrangements. Designed for non-insurance majors as well as a basis for more advanced courses.

385. Casualty Insurance.
Prerequisite: Insurance 381.
The use of risk bearing techniques in covering losses due to accidental damage or injury to property or persons; workmen's compensation; health and accident; automobile, public liability; burglary; fidelity and dishonesty; personal liability; and other types of losses.

387. Life Insurance.
Prerequisite: Insurance 381.
The uses of life insurance, mortality tables, types of policies, reserves and policy values, organization of life insurance companies, group and industrial insurance, legal interpretation of policies, state supervision of life insurance companies.

388. Property Insurance.
Prerequisite: Insurance 381.
The functions of property insurance; standard policies; settlement of losses; marine and inland marine; automobile; title; credit; other forms of property insurance.

502. Casualty Insurance Problems.
Prerequisite: Insurance 381 and 385.
Advanced study of all types of casualty insurance; automobile, professional and general liability, multi-line coverage, and how these relate to the risk-bearing function; legal and technical

aspects of selection of risk, contract underwriting and loss adjustment.

503. Property Insurance Problems.
Prerequisite: Insurance 381 and 385.
Practical application of property insurance policies, including multiple-lines, to specific risk-bearing problems; survey and insurance counseling to complex problems; legal and technical aspects of selection of risk, contract underwriting, and loss adjustment.

504. Life and Health Insurance Problems.
Prerequisite: Insurance 381 and 387.
An in-depth treatment of the various current problems confronting the life and health insurance industry; study will be concentrated in the legal, financial and social legislation currently facing the discipline.

505. Insurance Programming and Planning.
Prerequisite: Insurance 381 and 387.
Development of the human life values to include needs and their evaluation. A study of available assets, benefits and tax effects. The scientific application of the above to create, conserve, and distribute an individual estate.

506. Social Insurance.
Analysis of the major kinds of compulsory insurance and their interrelations, old age and survivors' insurance, unemployment insurance, and compulsory automobile insurance; comparison of social and private insurance.

507. Insurance Agency Management.
Prerequisite: Insurance 381, 385, and 388.
The economic functions performed by the general agency and its position in the insurance distribution system. Emphasis is given to the management aspects of agency operations from the sales, administrative and financial viewpoint.

511. Group Insurance and Pensions.
Prerequisite: Insurance 381.
A study of employee- and/or employer-oriented fringe benefit plans to include group or individual programs for life, health, pension, profit-sharing, disability income, and special stituations. Partial preparation for CLU exams.

513. Business Risk Management.
Prerequisite: 15 hours of insurance or permission of the instructor.
An analysis of the risks faced by the business enterprise and the study of the various methods of handling these risks including loss prevention, risk retention, self-insurance and corporate insurance programs.

599. Business Policy—Insurance.
Prerequisite: Senior standing.
This course seeks to integrate the techniques, methods, and knowledge from all areas of business administration into a meaningful whole; problems of setting policies which enable the firm to accomplish its objectives will be studied. This course is designed for final quarter seniors.

THE COLLEGE OF EDUCATION

ART EDUCATION (EAR)

Head: Nix. *Staff*: Clements, Edmonston, Kent, Squires, Williams.

(For other courses, see "Art Education," Art Department, College of Arts and Sciences)

335. Basic Curriculum in Art Education. Five double laboratory periods.
Prerequisite: Admission to Art Education sequence, Teacher Education Program, and a 2.7 average in the major.
Planning and developing procedures for implementing curriculum at the elementary level. An investigation into the literature, materials and procedures appropriate to children at different developmental levels.

336. Teaching Procedures in Art Education. Five double laboratory periods.
Prerequisite: see EAR 335.
Planning and implementing art instruction for the secondary level students. Specific teaching procedures, materials and techniques developed from Art Education philosophy and research.

345ABC. School Practicum in Art Education. 1 hour each.

400. Problems in Art Education. 1–10 hours.
Prerequisite: Senior Division standing and permission of instructor and advisor.
Specialized training appropriate to the individual, involving intensive investigation and analysis into specific problems of Art Education.

499. Research Seminar in Art Education. 1–10 hours.

546, 547, 548. Student Teaching in Art Education. 5 hours each.
Prerequisite: Admission to Teacher Education Program, EAR 335–336, and a 2.7 average in the major.
The student-teacher is placed for a quarter in an approved school and supervised in the actual teaching of art.

COUNSELOR EDUCATION AND PERSONNEL SERVICES (ECP)

Acting Head: Antenen. *Staff*: Bonney, Crisler, Dagley, Decker, Field, Gazda, Holt, Miller, Newton, Page, Rooks, Settles, Sink, Whitlock.

399. Career Development for Life Planning. 2–3 hours.

400. Special Problems in Counselor Education.

499. Research Seminar in Counselor Education. 1–10 hours.

500. Fundamentals of Guidance in Elementary and Secondary Schools.
An introduction to professional training for counselors and an opportunity for teachers to acquire an over-view of guidance functions in the school program.

501. Individual Appraisal.
Techniques for discovering characteristics of individuals. Students will develop competencies in recording, analyzing, correlating, and interpreting data as they relate to counseling.

502. Case Study Techniques.

CURRICULUM AND SUPERVISION (ECS)

Head: Firth. *Staff*: Bishop, Bruce, Burnham, Eisele, Grimsely, Halverson, Macagnoni, Nesbitt, Payne, Tillman, Wootton.

335. Basic Curriculum in Curriculum and Supervision.
Prerequisite: Admission to teacher education EFN 303 and EPY 304 or equivalent.
A basic course concerned with the total curriculum of the American high school—its development, issues and improvement.

400. Special Problems in ECS.
Selected students are permitted to pursue guided independent study appropriate to the individual.

505. Problems of Teaching in Curriculum and Supervision.
Instructional procedures and evaluation of teaching in terms of student growth.

EARLY CHILDHOOD EDUCATION (ECE)

(Programs currently under revision.)

Head: Cooper. *Staff*: Aderhold, Cryan, Mills, Osborn, Williams.

Courses leading to professional certification, nursery grade 3, are listed by departments.
The basic undergraduate sequence in professional education for the preparation of teachers of pre-primary and primary grades consists of the following courses.

CFD 210. Development Within the Family.

EEN 300. Children's Literature. 3 hours.

ECE 302. Orienting Practicum. 2–6 hours.

MUS 303. Music Methods. 3 hours.

EFN 303C. Introduction to Education.

EPY 304. Learning and Motivation.

ART 305. Art and Child.

MUS 305. Music Methods. 3 hours.

ECE 333. Program and Curriculum Development.

ERD 442. Reading and Written Discourse.

ECE/CFD 343. Teaching/Learning Strategies I. 3 hours.

ECE 344. Teaching/Learning Strategies II. 3 hours.

HED 344. Problems in Health Education. 3 hours.

CFD/PSY 395. Introduction to Child Development.

ECE 400. Special Problems in ECE. 1–10 hours.

EAV 401. Media Education. 1–3 hours.

EEN 442. Language Arts Methods. 3 hours.

EMT 442. Mathematics Methods. 3 hours.

ESC 442. Science Methods. 3 hours.

ESS 442. Early Childhood Social Studies. 3 hours.

PED 442. Movement Education.

ECE/CFD 496. Guidance of Parents and Children.

EXC 500. Introduction to Exceptional Children.

ECE 500. Early Childhood Education.

ECE 501. Current Trends in Early Childhood Education.

ECE 505. Problems of Teaching in Early Childhood Education.

ECE 546, 547, 548. Student Teaching. 5 hours each.

CFD 591. Program Activities.

CFD 598, 599. Practicum in Child Development. 10 hours.

EDUCATIONAL MEDIA (EAV)

Head: Skelton. *Staff*: Gardner, Wilkinson, Williams, Moore, King, Sparks, Haynes.

400. Problem in Educational Media. 1–10 hours.
Prerequisite: Permission of department.
Independent study of selected problems in media.

401. (ESS) Basic Instructional Media Competencies. 3 hours. Two 2-hour laboratory periods.
Prerequisite: Junior/Senior standing in Education.
Introductory laboratory course in operation of audiovisual equipment, sources, selection, and preparation of instructional media materials.

500. (ELE) Utilization of Educational Media.
Three lectures and three laboratory periods.
Introduction to educational media. Equipment, materials, sources, identifying media for learning tasks.

501. Design and Production of Educational Media. Two 3-hour laboratory periods.
Introductory laboratory course in designing and producing instructional media: transparencies, slides, tapes, and other media for teaching.

502. Educational Television Production. Two 4-hour laboratory periods.
Prerequisite: EAV 501 or permission of instructor.
Design, production, use of videotapes working with closed-circuit, portable television suitable for school use.

503. Educational Television Production. Two 4-hour laboratory periods.
Prerequisite: EAV 501 or permission of instructor.
Instructional design of media materials including various types of graphic and photographic materials.

520. (EIA) Photography in Instruction. 3 lectures, 2 double lab periods.
Prerequisite: EAV 501 or permission of instructor.
Basic principles, skills, and techniques of photography and their application to problems of instruction. Areas covered include introductory skills in camera and film use, darkroom procedures, processing and printing in black and white and color.

521. (EIA) Graphic Technology. 3 lectures, 3 double laboratory periods.
Prerequisite: Education majors.
Demonstrations, lectures and laboratory sessions designed to provide majors in Educational Media and Industrial Arts with competencies in graphic technology. Emphasis is placed on layout, image assembly, photo conversion, platemaking, offset and screen printing, binding, finishing.

522. (EIA) Advanced Graphic/Photographic Techniques.
Prerequisite: EAV/EIA 520 or 521 or permission of instructor. Education majors.
An advanced projects course in graphic and photographic production. Through lectures, demonstrations and lab experiences students will further develop techniques in the production of educational materials.

EDUCATIONAL PHILOSOPHY (EPH)

Head: Newsome. *Staff*: Heslep, Kelly.

380. Introductory Philosophy of Education.
Designed to get students to think critically and analytically about fundamental issues in education. The first part of the course acquaints students with the various types of philosophy and philosophy of education. Attention is given to speculative, normative, and analytical philosophy. Rationalism and empiricism are contrasted and sub-schools of each are examined. Special attention is given to logic and to methods of critical analysis. The second part of the course is devoted to critical analysis of such concepts in education as teaching, learning, educating, education; ends, means, aims, values, democracy, and knowledge.

EDUCATIONAL PSYCHOLOGY AND MEASUREMENT (EPY) AND RESEARCH (ERS)

Head: Torrance. *Staff*: Allen, Anderson, Bashaw, Blaubergs, Bledsoe, Bruch, Dekle, Frasier, Gagne, Goolsby, Huberty, Kaufman, Kingston, Klein, McBride, Payne, Powell, Richmond, Schab, Scott, Stauffer, Winnick, Wood, Yeatts.

(EPY)

201. Human Development and the Educative Process. 1–3 hours. Two hours of lecture and two hours of laboratory.
Mental, physical, emotional, and social growth of children in relation to school learning. Directed observation.

304. Learning and Motivation. 1–5 hours. 5 hours in classroom-based sections. 4 hours lecture; 2 hours of laboratory.
Prerequisite: Junior or higher standing.
Learning theory and processes of both students and teachers; dimensions of motivation related to learning and performance.

305. Adolescent Psychology. 4 hours lecture; 2 hours laboratory.
Prerequisite: EPY 304 or equivalent.
Interests, needs, and abilities of adolescents; evaluation of their total development.

400. Special Problems in Educational Psychology. 1–10 hours.
May be independent study with variable credit with consent of instructor or assembled class especially developed to study some problem or set of problems in Educational Psychology with specified credit and prerequisites.

401. Psychology of Childhood. 4 hours lecture; 2 hours laboratory.
Prerequisite: EPY 304 or equivalent.
Interests, needs, and abilities of children; evaluation of their total development.

402. Sex Differences and Sex Role Stereotyping. 4 hours lecture; and 2 hours laboratory.

Prerequisite: EPY 201, EPY 304, EPY 305, or equivalent.
Sex differences and similarities from biological and psychological viewpoints and their interrelatedness with the education process.

472. (PSY) Programmed Instruction. 4 hours lecture; 2 hours laboratory.
Prerequisite: Psychology 101 or EPY 304.
Theory, evaluation, and writing techniques, with practice in writing a program.

500. Educational Tests and Measurements. 4 hours lecture; 2 hours laboratory.
Prerequisite: Four courses in education.
Nature and function of measurement in education. Teacher-made and standardized tests and scales. Introductory statistical concepts of measurement.

506. Classroom Learning Problems of Disadvantaged Children. 4 hours lecture; 2 hours laboratory.
Prerequisite: EPY 304 or equivalent.
Psychological characteristics of economically, culturally, and educationally disadvantaged children and youth, special classroom learning problems, and classroom learning problems in integrated schools.

511. Characteristics of Gifted Children and Youth. 4 hours lecture; two hours laboratory.
Prerequisite: EPY 201, EPY 304, or equivalent.
Psychological characteristics of gifted children and youth, including studies of the lives of eminent persons, empirical studies of gifted children and youth today, and genetic studies of genius.

546, 547, 548. Student Teaching in Educational Psychology. 5 hours each.
Prerequisite: Major in Educational Psychology.

(ERS)

400. Special Problems in Educational Research 1–10 hours.
Independent study with permission of instructor.

401. Methods of Research in Education. 4 hours lecture; 2 hours of laboratory.
Prerequisite: EPY 304 or equivalent.
Research concepts and skills and related competencies involved in the interpretation and application of reported research.

411. Applied Descriptive Statistics. 4 hours lecture; 2 hours laboratory.
Interpretations and computations in descriptive statistics with emphasis on correlation and regression with brief introduction to probability and the normal distribution.

546, 547, 548. Student Teaching in Educational Research. 5 hours each.

ELEMENTARY EDUCATION (EEL)

(Programs currently under revision.)

Head: Cooper. *Staff*: Anderson, Buttery, Compton, Elmore, Hawn, Johnson, McNair, Powell, J. Powell, Reisman, Williams.

Courses leading to professional certification, grades 1–7, are listed by departments.

The basic undergraduate sequence in professional education for the preparation of elementary teachers and teachers of primary grades consists of the following courses:

EPY 201. Human Development. 3 hours.

EEN 300. Children's Literature. 3 hours.

EFN 303. Introduction to Education.

MUS 303. Music Methods. 3 hours.

MUS 304. Music Methods. 3 hours.

EPY 304. Learning and Motivation.

ART 305. Art and Child.

PED 307. Physical Education Methods.

EEL 333. Principles and Practices in EEL. 1–5 hours.

EEL 334. Principles and Practices. 1–5 hours.

EMT 334. Principles and Practices.

EEN 338. Language Arts Methods. 3 hours.

ESC 339. Science Methods. 3 hours.

ESS 340. Social Science Methods. 3 hours.

HED 334. Problems in Health Education. 3 hours.

EEL 345ABC. School Practicum. 1 hour each.

EEL 400. Special Problems in EEL. 1–10 hours.

EXC 500. Introduction to Exceptional Children.

EEL 503. The Middle School.

EEL 505. Problems of Teaching Elementary Education.

EEL 546, 547, 548. Student Teaching. 1–5 hours.

ENGLISH EDUCATION (EEN)

Head: O'Donnell. *Staff*: Agee, Combs, Ellis, Fisher, Kantor, Kirby, Natarella, O'Donnell, Pace, Perron, Root, Veal.

300. Children's Literature. 3 hours.
Literature suitable for elementary school children; stimulation of children's reading.

335. English Curriculum in Secondary Schools.
Planning for teaching English in secondary schools.

336. Teaching Procedures in Language Education.
Methods for teaching English in secondary schools.

338. Elementary Language Arts Methods. 1–3 hours.
Study and evaluation of teaching materials and techniques in language arts for elementary schools.

345. School Practicum in English Education. 1 hour.

400. Special Problems in English Education. 1–10 hours.

442. Early Childhood Language Arts Methods. 1–5 hours.

500. (LIN) Language Acquisition and Development. 5 hours.
A language oriented study of the stages a child goes through in acquiring his native language and the processes used in developing sophistication. Infant, childhood, and adolescent periods shown as a continuum in the native's linguistic development.

504. Language Arts for the Elementary Teacher.
Instructional procedures, materials, and evaluation in teaching English, including oral and written composition, spelling, handwriting, and grammar in the elementary school.

506. Literature Study in Secondary Schools.
A study of literature and teaching methods appropriate for an effective secondary school literature program.

507. (LIN) English Language Studies for Teachers.
Language concepts are drawn from the history of English, from grammatical systems (with special emphasis on transformational-generative grammar), from theories of usage, semantics, lexicography, and dialectology. The focus of the course, however, is on the instructional uses of applications of these concepts.

509. Composition in Elementary and Secondary Schools.
Instruction in the modes of written expression appropriate for a school curriculum and study of composition teaching methods.

546, 547, 548. Student Teaching in English. 5 hours each.

FOREIGN LANGUAGE EDUCATION (EFL)

Head: O'Donnell. *Staff* Cooper, Kalivoda, Morain.

110. English as a Foreign Language.

335. Foreign Language Curriculum in Secondary Schools.
Planning for teaching foreign language in secondary schools.

336. Teaching Procedures: Foreign Language.
Methods for teaching foreign language in secondary schools.

345. School Practicum in Foreign Language. 1 hour.

400. Special Problems in Foreign Language Education. 1–10 hours.

505. Teaching for Cross-Cultural Understanding.

507. (FR) Applied French Linguistics.

507S. (SP) Applied Spanish Linguistics.
The shaping of methodology for foreign language teaching by means of linguistic analysis of language. Emphasis is given to methodology in teaching pronunciation, lexicon, structure, and culture.

546, 547, 548. Student Teaching in Foreign Language.

FOUNDATIONS OF EDUCATION (EFN)

Head: Asbury. *Staff*: Constantino

303. Introduction to Education. 1–5 hours. Four lectures and one double laboratory period.
Prerequisite: Sophomore or higher class standing.
Familiarization with nature, origin, and function of education in the United States. Includes teacher-aide experience in public schools and human relations training.

303E. Introduction to Education. Three double field experience periods and two double seminar periods.
Prerequisite: Sophomore or higher class standing.
Open only to elementary and early childhood

education majors. Familiarization with nature, origin, and function of education in the United States. Includes teacher-aide experience in public schools and human relations training.

303S. Introduction to Education. Three double field experience periods and two double seminar periods.
Prerequisite: Sophomore or higher class standing.
Open only to secondary and special education majors. Familiarization with nature, origin, and function of education in the United States. Includes teacher-aide experience in public schools and human relations training.

HEALTH, PHYSICAL EDUCATION, RECREATION, AND SAFETY EDUCATION

Head: Jewett. *Staff*: Bowen, Bowers, Bullock, Budschuh, Carver, Castronis, Champlin, Clegg, Clemence, Conley, Cunningham, Cureton, Eaton, Fales, Graham, P. Graham, Heimerer, Ike, Jackson, Johnson, Klein, Kindig, Kuykendoll, Lawson, Lewis, C. Long, E. Long, Mason, McEvoy, McMahan, Miles, Mrvos, Mullan, Murphey, O'Morrow, Pigg, Reid, Russell, Scholle, Soares, Stanley, Trigg, Trimble, Washington, Wheeler, Wilks, Williams, Windell.

Health Education (HED)

119. Standard First Aid and Personal Safety. 3 hours.
Instruction in fundamentals of first aid. Students who qualify receive American Red Cross certificate.

171. Principles of Personal Health. 3–5 hours.
Numerous factors affecting the personal health of the individual are considered. Topics discussed include mental health, nutrition, diet and weight control, physical fitness, smoking, human sexuality, consumer health, drugs, disease, environmental health and safety.

301. Introduction to Health and Safety. 2 hours.
Analysis of the philosophy and principles underlying the field of Health and Safety. Includes literature, research, organizations, scientific foundations, and employment potential.

309. Care and Prevention of Athletic Injuries. 3 hours.
Analysis of common athletic injuries, conditioning and safety practices, and taping and bandaging.

319. Advanced First Aid. 2–5 hours.
Problems and training in the aspects of emergency medical care required at the scene of an accident. Students who qualify may receive A.R.C. certification in advanced first aid. CPR training and certification included.

335. Basic Curriculum in Health and Safety.
Various methods of curriculum planning in health education, analyzing content areas, and reviewing new approaches to health teaching.

336. Teaching Procedures in Health Education.
Organization and administration of health education programs in the schools. Planning the curriculum in health education as part of the total school program.

344. Health and Safety in Elementary School. 3 hours.
The role of the elementary teacher in providing health services and a healthful environment. Content, methods, and materials for health instruction.

345. Practicum in Health Education. 1–3 hours.
Individual practical experience within the school setting.

370. Curriculum Planning in Health Education.
A review of community health programs and objectives for the recreation or social work major. Emphasis is given to creating a comprehensive approach to community health problems by invovling the recreation and social worker.

400. Special Problems in Health Education. 1–10 hours.
Independent study in health education by permission of the instructor.

404. Introduction to the Study of Disease. 3 hours.
An introduction to the principles, uses, techniques, and language of epidemiology and the epidemiological method.

405. Health Data Analysis. 3 hours.
Prerequisite: Introductory statistics course.
Introduction to public health statistical procedures, including historical aspects, sources of health data and their collection and classification, demographic techniques, vital statistics, rate standardization, data collection methodology, and analysis of health data.

442. Health in Early Childhood. 1–5 hours.

506. Teacher Preparation in Human Sexuality.
Theory and practice of family life and sex education; basic issues, philosophy and guiding principles; legal implications; needs, justification, and objectives; and curriculum critique.

511. Organization and Administration of School Health Programs.
The organization and administration of the total school health program is presented. Suggestions of a practical nature are presented which will enable administrators, faculty, and staff to provide a quality school health program.

512. Foundations of Health Education.
History, philosophy and principles directed to a working philosophy and the processes of health education. Emphasis on both school and public health education.

513. Community Health.
Community health—international, national, state and local. An understanding of the organizational relationships of major health agencies and related professional organizations with emphasis on contributing health resources.

516. Current Issues in Health and Safety.
Prerequisite: HED 512.
Critical health issues including drug abuse, smoking, delinquency, suicide and others. Emphasis on the etiology of health problems, and the role of parents, teachers, administrators, and the community in meeting and preventing health problems.

521. The Effects of Alcohol and Drugs. 5–10 hours.
Social, moral, psychological, and physiological effects of beverage alcohol and drug use on the individual, family and community.

522. Health Care Delivery Systems.
Prerequisite: HED 301, and 370.
An in-depth study of the structure, role and function of existing components of our health care delivery system, and an analysis of future trends in health care delivery systems.

523. Patient Education. 3 hours.
Prerequisite: HED 171 or 370.
An in-depth study of comprehensive patient education programs. Emphasis on patient education program development, implementation, and evaluation as related to the patient management of illness and preventive health care.

546, 547, 548. Student Teaching in Health Education. 5 hours each.

Physical Education (PED)

Basic Physical Education.

Basic service courses have been designated by numbers from 100 to 165. A listing of approved activity courses is available in the timetable of classes printed each quarter. Students may select activities which best meet their special needs and interests, based upon their health, organic fitness and previous experience in physical education.

178ABC–179ABC. Physical Education Majors. 1 hour each.
Two hours a week for six quarters. Laboratory period may be arranged.
These courses are designed for physical education and recreation majors as introductory courses to junior and senior methods and skill courses.

180, 181, 182, 183, 184, 185, 186, 187, 188, 189. Skill Techniques. 1–3 hours.
Students are required to select three to six of the ten skill technique courses offered. Selection is based upon consultation with the advisor. M and W identify the differences in the activity and credit. M=3 credits; W=1 credit.

180M Tumbling
181M Aquatics
182M Golf
183M Tennis
181W Archery-Badminton
182W Fencing
183W Bowling
184W Golf
185W Gymnastics
186W Recreational Sports
187W Life Saving
188W Tumbling
189W Intermediate Modern Dance

211. Folk and Square Dance Methods. 3 hours.
Methods and techniques in folk and square dance in a physical education program. Experience is given in planning, teaching, and evaluating a folk and square dance program.

215. Aquatics. 3 hours.
Prerequisite: Intermediate swimming or the consent of the instructor.
Prepares students for the American Red Cross Instructor's Water Safety course, for conducting swimming meets, and for presenting water shows. Recommended to students who are interested in camping activities.

280, 281, 282, 283. Physical Education Activities. 3 hours.
These courses aim to develop knowledges, understandings, skills, and teaching techniques, and methods in the basic activities appropriate to the teacher of movement and physical education. Laboratory period to be arranged. M and W identify the differences in the activity.

280M Wrestling
280W Team Sports
281M Gymnastics
281W Method and Materials-Dance Ed.

282M Badminton-Volleyball
282W Individual Sports
283M Wt. Training
283W Tennis Methods

303. (DED) Rhythmic Movement Activities for Children. 3 hours.
A course designed to introduce the teacher to the skills and activities of creative movement and rhythm for children from nursery school through 6th grade.

307. Physical Education in the Elementary School. 1–5 hours.
Designed to help the teacher understand the place of physical education in the elementary school program and its contribution to the child. Experience is given in planning, teaching, and evaluating physical educational activities.

308. Analysis and Teaching of Movement Games.
A course designed to introduce students to content and structure of movement games for children. The student will also study and practice effective approaches by which games can be taught to children.

336. Teaching Procedures in Physical Education.
Organization and administration of physical education and recreation programs in the school. Planning the curriculum in physical education as a part of the total school program.

345ABC. School Practicum in Physical Education. 1 hour each.
Individual practical experience within the school setting.

360. Kinesiology.
Prerequisite: Zoology 212.
Analysis and application of the physical and physiological principles involved in human motion. Physical laws governing the manipulation of objects in sports.

361. Adapted Physical Education.
Prerequisite: Physical Education 360.
The techniques of appraisal and guidance of pupils with faulty body mechanics, orthopedic defects and other atypical conditions. Practice is given in the therapeutic use of exercise, massage, relaxation, and other physical modalities.

372. History and Principles of Physical Education.
A survey of the history and study of principles and trends in health, physical education and recreation, professional organizations, literature, and outstanding programs.

379, 380, 381, 382. Theory, Coaching Methods and Officiating of Major Sports. 3 hours.
Theory, teaching and coaching techniques of team and individual sports. Coaching systems, scheduling, officiating, and administration of athletic programs. M and W identify the differences in the activity.

379M Track and Field
380W Volleyball
380M Football
381W Basketball
381M Basketball
382M Baseball
382W Softball

383. Evaluation and Measurements. 3 hours.
Methods in evaluating and measurement of physical education activities; procedures to be used in evaluating these tests and their results, including statistical analysis.

400. Special Problems in Physical Education. 1–10 hours.
Independent study in physical education by permission of the instructor.

442. Movement Education for the Young Child. 1–5 hours.
This course is designed to introduce the teacher to the skills and activities of movement education for children in nursery and pre-school. The student will also practice and study the effective approaches to teaching movement skills to children in these age groups.

505. Problems of Teaching in PED.

546, 547, 548. Student Teaching in Physical Education. 5 hours each.

Park and Recreation Administration (REC)

118. Social Recreation. 3 hours.
Methods and materials in social recreation. Experience will be given in group planning and conducting social activities. Some laboratory experience will be required.

203. Introduction to Park and Recreation Admistration. 3 hours.
History, development, trends, and social role of recreation in modern society.

345ABC. School Practicum in Recreation. 1 hour each.

384. Interpretation of Recreation. 3 hours.
Designed to familiarize the students with the recreation profession and the philosophy of recreation. A survey is made of the entire field of recreation.

385. Problems in Recreation. 3 hours.
Consideration of needs and problems in recreation in county and rural areas, therapeutic, employee, and armed forces.

386. Camp Counseling. 3 hours.
Designed to give prospective camp counselors an understanding of the total camp program, duties and responsibilities of camp counselors. Techniques of camp leadership will be considered.

387. Organization and Administration of Recreation.
Study and evaluation of the organization and administration of recreation and park agencies.

388. Youth Serving Agencies. 3 hours.
Objectives, organization, program and membership of principal national youth agencies. A discussion of professional opportunities in these agencies will be explored.

389. Seminar in Recreation. 1 hour.
Prerequisite: Senior class standing.
Discussion of the current aspects of the field of recreation as a profession. Trends and problems which are of concern to graduating recreation majors.

390. Supervision of Community Centers and Playgrounds. 3 hours.
This course covers the varied aspects of the community center and playgrounds operation; stresses leadership techniques; outlines programs and considers problems relating to the planning and operation of these programs.

400. Special Problems in Recreation. 1–10 hours.

512. Problems in School and Community Recreation.
Prerequisite: Four courses in education.
Problems of school and community recreation pertaining to philosophy, program, facilities and leadership. This course will consider the school camp program.

530. Camping Administration.
Prerequisite: REC 386 or organized camp experience.
Organization, administration, staffing, and program planning for different types of camps.

531. Outdoor Recreation.
The organization and administration of outdoor recreation in local, county, and federal agencies with emphasis on objectives, philosophy, problems, trends, and methods of operation.

532. The Role of Government in Parks and Recreation.
National and state government park and recreation policies and their impact on community recreation programs.

534. Public Recreation Administration.
Prerequisite: Recreation 512.
Methods of organizing and administering recreation departments at the local level.

535. Park Management.
An introduction to the management, operation, and development of public parks and open spaces.

536. Introduction to Recreation for the Ill and Handicapped.
Prerequisite: EXC 500 or consent of instructor.
Therapeutic recreation services in the treatment and rehabilitation of persons with physical, emotional and intellectual disorders.

537. Recreation for the Mentally Retarded.
Prerequisite: Recreation 536 or EXC 505.
The use of recreational activities and their therapeutic value for the mentally retarded.

538. Recreation and Aging.
Prerequisite: REC 512 and SOC 665.
Recreation program services for the aging and aged in both community and institutional settings.

546, 547, 548. Student Teaching in Recreation. 5 hours each.
Recreation majors are placed in selected recreation centers for an entire quarter, during which time they are supervised in directing recreation activities.

Safety Education (SED)

336. Teaching Procedures in Health and Safety. 3 hours.

345. Practicum in Health and Safety. 1–3 hours.

400. Special Problems in Safety Education. 1–10 hours.
Independent study in safety education by permission of the instructor.

445. Industrial Safety.
Introduction to the specific areas and the broad scope in methods, materials, and problems in Industrial Safety programming with special emphasis on organization and implementation of accident prevention and control techniques.

544. Safety in Sports and Recreation.
Philosophy of sports safety: human and environmental factors and their interrelationships in sports injury and its control; risk-taking and decision solution strategies; application of accident prevention and injury control to selected

sports; contributions of sports medicine to safety.

546, 547, 548. Student Teaching in Safety Education. 5 hours each.

575. Foundations of Safety Education.
An introduction to the social significance of the accident problem and the nature of the accident prevention program.

576. Principles of Traffic Safety.
An analysis of traffic accidents and traffic safety practices with psychological testing and use of simulation in the development of knowledge concerning the over-all driving situation.

577. Practices in Driver Education.
Prerequisite: SED 576 or consent of instructor.
The teaching of driving with dual-control automobiles, development of approved driving attitudes and habits, and the administration of high school programs of driver education.

579. Fundamentals of Fire Prevention.
An understanding of the public and private aspects of fire prevention. An overview of fire prevention, its history and philosophy, as well as the functions and procedures for an ongoing program.

Dance Education (DED)

153ABCDEF. (PED) Concert Dance. 1 hour each.
This course is designed to provide performance preparation and experience in modern dance, ballet, jazz and ethnic styles. Choreography although not required is encouraged. An annual concert performance plus other public performances is required.

252. Improvisation. 2 hours.
Provides the individual an opportunity to discover and explore selfinitiated movement and idea relationships and experiences. The purpose is to aid in the development of the student's creative approach to composing and performing. Emphasis will be on individual and group interaction within structured and free improvisational sitautions.

257. Introduction to Modern Dance Composition. 3 hours.
A study of the principles of dance composition with experience in the development of individual and group studies.

258. Dance Perspectives. 3 hours.
A study of the nature of dance as an art form and as an educational and therapeutic vehicle. The course is designed to increase the student's knowledge of the many facets of dance and to encourage his examination of his purpose in dance. The class involves lectures, seminars and studio experiences.

265ABC. Modern Dance Tech. I. 2 hours each.
This low intermediate level course is designed for the purpose of aiding the student in the acquisition and development of technical skills in modern dance. Techniques basic to this dance form plus motional properties as they relate to dance will be emphasized.

266ABC. Ballet Tech. I. 2 hours each.
Designed to build the strength, flexibility, endurance, and control necessary for performance of low intermediate level ballet barre exercises, adagio sequences, and allegro enchainments. An understanding of proper body mechanics and the French vocabulary for ballet will also be emphasized.

281. (PED) Methods and Materials in Dance Education. 3 hours.

303. (PED) Rhythmic Movement Activities for Children. 3 hours.

345ABC. School Practicum in Dance Education. 1 hour each.

351. Composition II. 3 hours.
Prerequisite: DED 257.
A study of principles of dance composition with emphasis on the utilization of those principles in solo and group choreography.

352. Theory and Practice in Modern Dance Technique. 3 hours.
Prerequisite: Consent of instructor.
Analysis and exploration of the technical aspects of modern dance with emphasis on anatomical structure, muscular activity and movement principles. Participation and teaching experience in a technique class will be part of the laboratory work.

353. Theories of Movement. 3 hours.
Prerequisite: Consent of instructor.
A study of movement theories of noted dancers and movement analysis.

354AB. Dance Workshop. 3 hours each.
Prerequisite: PED 257.
Projects in choreography, directing, producing and performance culminating in public concern presentations.

365ABC. Modern Dance Tech. II. 2 hours each.
This course is designed for the upper-intermediate level student in modern dance. Its purpose is to provide for the continued development of the student's technical skills and performance ability.

366ABC. Ballet Tech. II. 2 hours each.
This course is designed to build the strength, flexibility, endurance and control necessary for performance of upper-intermediate level ballet barre exercises, adagio sequences and allegro enchainements. Pointe work will be included.

400. Special Problems in Dance Education.
1–10 hours.

450. History of Dance from Primitive Man Through the Renaissance.
A study of the forms of dance both as a reflection of cultural history and as an art form from primitive times through the Renaissance.

451. History of Dance from the Baroque Period Through the Twentieth Century.
A study of the forms of dance both as a reflection of cultural history and as an art form from the Baroque period through the twentieth century. The contributions of outstanding leaders will be analyzed.

455. Readings in Dance. 3 hours.
Prerequisite: Consent of instructor.
A critical review of literature in the field of dance and related arts with emphasis on current personalities, research, issues, and educational trends.

465ABC. Modern Dance Tech. III. 2 hours each.
Prerequisite: DED 365C.
Designed for the advanced student of modern dance. Its purpose is to allow for the continued development of technical skill with emphasis on individual style and performance sensitivity.

466ABC. Ballet Tech. III. 2 hours each.
Prerequisite: DED 366C.
Designed to build the strength, flexibility, endurance and control necessary for performance of advanced level ballet barre exercises, adagio sequences, allegro enchainments, and pointe work. Style, perfection, and performance quality will be emphasized.

LIBRARY EDUCATION (ELE)

Head: Ormston. *Staff*: Cawthon, Eidson, Jones, Kenny.

400. Special Problems in ELE. 1–10 hours.

401. Introduction to Librarianship. 1 hour.
Introductory seminar to the profession. By use of lecture and seminar, students will be introduced to the role of the library in society, librarianship as a profession, history of libraries and media, and types of libraries and positions in libraries. Restricted to library education students; required of all students working toward associate library media specialists certification. Offered summer and fall quarters.

402. Reference Materials and Services.
Nature of reference services and knowledge of all types of materials; content, evaluation, organization, and utilization.

403. Introduction to Cataloging and Classification.
Aims and techniques of cataloging, classification, storage and retrieval of media. Practice in analyzing, classifying, cataloging and organizing all types of media.

404. Administration of a Library Media Center.
Aims and program of the library media center; techniques and procedures of library media center operation.

500. (EAV) Utilization of Educational Media.

501. Building Library Media Collections.
A study of media selection aids, book reviewing, reading lists, publishers, and publishing; standards useful in building and balancing a collection; methods of reading guidance.

511. (EEN) Children's Literature in the Elementary School.

MATHEMATICS EDUCATION (EMT)

Head: Wilson. *Staff*: Cooney, Davis, Hatfield, Hooten, Kilpatrick, McKillip, Mahaffey, Steffe, Wagner.

335. Secondary School Mathematics Curriculum.
Prerequisite: Admission to teacher education, EPY 304, and MAT 254.
Determining content for the mathematics curriculum of the secondary school and demonstrating competency in this content.

336. Teaching Procedures in Secondary School Mathematics. Five lectures and five laboratory periods.
Prerequisite: EMT 335.
Planning, developing, and implementing instruction in secondary school mathematics.

337. Methods of Teaching Elementary School Mathematics. 1–3 hours. Two lectures and one to three laboratory periods.
Prerequisite: MAT 205–206; corequisite: EEL 334.
A competency approach to planning, developing, and implementing mathematics instruction in elementary schools.

345ABC. School Practicum in Secondary Mathematics. 1 hour each. Two weeks in a public secondary school and 1 hour seminar per week in the following quarter.
A school-based, planned practicum experience coordinated with beginning a school year.

400. Problems in Mathematics Education. 1–10 hours.
Up to 10 hours EMT 400 enrollment may be used in total program.

405. Diagnostic Teaching of Arithmetic.
Diagnostic strategies relating to children's difficulties in learning elementary mathematical concepts.

435. History of Mathematics. 3 hours. Three lectures.
An historical development of selected topics in mathematics. The organization of the course is along lines of mathematical content, but the motivational and pedagogical relevance of such historical insights are emphasized.

442. Mathematics Methods in Early Childhood Education. 3 hours.
Prerequisite: MAT 205–206.
Deisgned to cover those methods of teaching mathematics and characteristics of learners and mathematics curriculum most appropriate for children in the ages of nursery school through the third grade.

499. Research Seminar in Mathematics Education. 1–10 hours.
One 5-hour enrollment is required as a post-student teaching seminar.

501. Teaching Mathematics in the Elementary School.
Planning, developing, implementing, and evaluating instructional procedures for mathematics in the elementary school.

515. Contemporary General Mathematics.
An approach to mathematics curriculum, teacher's procedures, and evaluation through the examiniation of mathematics content with emphasis on the function concept, applications, and problem solving.

546S, 547S, 548S. Student Teaching in Secondary School Mathematics. 5 hours each.
Full-time teaching in a secondary school.

MUSIC EDUCATION (EMU)

Head: Parker. *Staff*: Graham, Hair, Harriman, Jameson, John, Leglar, D. Lowe, J. Lowe, Placek, Simons, Waln.

(For other courses, see "Music Education," Department of Music, College of Arts and Sciences.)

345ABC. School Practicum in Music Education. 1 hour each.

400. Problems in Music Education. 1–10 hours.

505. Problems of Teaching Elementary Music.

546, 547, 548. Student Teaching in Music Education. 5 hours each.

DIVISION FOR EXCEPTIONAL CHILDREN

Head: Blake. *Staff*: Alper, Bartlett, Berryman, Beardsley, Beussee, Blue, Burton, Campbell, Champlin, Clark, Combs, Curtis, Dean, Fields, Geter, Harvey, Hirshoren, Hunt, Kavale, Kools, Lomax, McCoy, McKenzie, Molar, Moreland, Neal, Penrod, Shotick, Smith, Thomson, Uhlir, Umansky, Williams, Williams, Wood.

Exceptional Children Courses (EXC)

345ABC. School Practicum in Exceptional Children. 1 hour each.

400. Special Problems in Exceptional Children. 1–10 hours.

500. Introduction to Exceptional Children.
Prerequisite: Four courses in education including EPY 304.
Nature, cause and treatment of children's disabilities and their influence on emotional, social, education, and vocational adjustment. Special services required for exceptional children to develop to the maximum capacities.

501. Principles of Assessment of Exceptional Children.
Prerequisite: EXC 500 and 504.
Study of standardized and informal evaluative procedures for use with exceptional children. Experience in formal and informal diagnostic techniques and in reporting.

504. Nature of Mental Retardation.
Prequisite: EXC 500.
Description to types, nature, and causes of mental retardation and implications for adjustment and education. Problems of parental adjustment, diagnosis, treatment and educational modifications.

505. Problems of Teaching EXC.

506. Materials and Methods of Teaching Skill Subjects to the Mentally Retarded.
Prerequisite: Four courses in education plus EXC 500 and 504 and 508.
The study, selection and preparation of suitable curricular materials: methods used in teaching the skills which mentally retarded children need.

507. Secondary School Programming for the Educable Mentally Retarded.
Prerequisite: EXC 500, 504 and 508.
Study will emphasize the needs of the adolescent and young adult mentally retarded: preoccupational and occupational and related experiences, home and family living, civic responsibility, and community living. The relationship of the teacher as a counselor and the utilization of community resources will also be stressed.

508. Curriculum for the Educable Mentally Retarded.
Prerequisite: EXC 500 and 504.
Study of various curricular approaches to the eudcation of the educable mentally retarded; i.e., subject matter—academic, developmental, occupational education. Throughout, curricular programs will be considered in reference to psychological and cultural determinants in the mentally retarded and attainments necessary for adequate function in society.

520. Behavioral Disorders in the Classroom.
Prerequisite: EXC 500 or consent of the instructor.
Considers the nature and characteristics of emotional and social disturbances and effects of learning and educational adjustments. Basic alterations in school program are discussed.

521. Teaching Procedures for Disturbed Children.
Prerequisite: EXC 500, EXC 520.
Planning and implementing adaptations in the educational programs for disturbed children. Emphasizes intervention techniques and behavior management, educational diagnosis, therapeutic and remedial teaching, and the relationship process.
Note: There is no program leading to an undergraduate degree in the emotional disturbance area. Degree programs are at the master's level and above. For further information see the Graduate School Bulletin and/or contact Head, Education of Disturbed Children.

546RS, 547RS, 548RS. Student Teaching in Special Education. R= Mental Retardation. S= Severely Mentally Retarded. 5–15 hours.

595. (CFD) Teaching the Severely Mentally Retarded.
Prerequisite: EXC 500, 504, Home Economics (PSY) 490.
This course will consider (1) the growth and development of the severely mentally retarded and (2) programs maintained in public schools, institutions, private agencies, and sheltered workshops to prepare them for optimum functioning with emphasis on family life, mobility, employment, literacy, etc., from both the curricular and methodological aspects of education.

Speech Pathology and Audiology (SPA)

310. Survey of Speech Problems.
The introductory course for those majoring in speech pathology. Acts as course for the classroom teacher who wishes to become informed about speech problems and as a course for students majoring in speech. A study of the major etiology and basic therapy for all types of speech defects, with a concentration on those most commonly found in the classroom.

400. Special Problems in Speech Pathology and Audiology. 1–10 hours.
Adaptation of the speech pathology and audiology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the head of speech pathology and audiology.

412. Anatomy and Physiology of the Speech Mechanism. 3 hours.
A study of the anatomy and physiology of breathing, phonation, resonance, and articulation for speech; a study of the physical phenomena in voice and speech.

413. Anatomy and Physiology of the Hearing Mechanism. 3 hours.
Anatomy and physiology of outer, middle and inner ear structures; auditory pathways leading to and including the brain stem; and the primary auditory projection areas in the cortex.

414. Speech and Hearing Science.
The physical properties of sound; basic psychoacoustics; the human speech mechanism as a sound source and resonator; acoustic properties of vowels and consonants; sound spectrum relationships of vocal pitch, loudness, and voice quality; basic instrumentation.

450. (PSY) Language Development.
Prerequisite: EPY 304 or equivalent and PSY 490 or equivalent.
Processes of reception, integration, and expression of symbolic information; nature and effects of linguistic symbolism on personal development and behavior; language development norms.

451. Speech and Language Problems in the Classroom.
A consideration of speech and language problems on the basis of classroom involvement; basic information on speech and language development and interfering factors.

471. Introduction to Audiology.
Prerequisite: SPA 413.
The anotomy and basic psychophysics of hearing, the pathologies causing hearing loss, and basic theory of hearing evaluations. A survey of educational, psychological and medical rehibilitation for persons with a loss. Practice in pure tone audiometry.

473. Psychology of Deafness.
Prerequisite: SPA 471.
A study of the development, adjustment, and educational needs of the deaf, including mental development, personality development, emotional adjustment, and social maturity; the aptitudes, special abilities and associate handicaps of the deaf.

474. Articulatory Disorders of Speech.
Etiology, rationale and methods of therapy for functional and organic disorders of voice and articulation. Development of a therapeutic program and lesson plans.

475. Voice Disorders. 5 hours.
Pitch, loudness, and quality disorders of voice due to functional causes; etiologies and therapies with supervised laboratory experience.

476. Stuttering: Etiology and Therapy. 3 hours.
Major theories of causation of stuttering whether based in neurophysiological, emotional, or learning factors. The development of an integrated therapy based on modern research.

477. Clinical Audiology I. 3 hours.
Prerequisite: SPA 310, 413, 471.
Rationale and procedure for measuring aspects of hearing, including simple and complex stimuli, threshold and supra-threshold measurements, and pure tone speech audiometric measures.

478. Clinical Audiology II. 3 hours.
Prerequisite: SPA 310, 413, 471, 477.
The study of the rationale and procedures of advanced tests used for differentiating between types of audiotory disorders.

479. Speech Audiometry and Hearing Aids. 3 hours.
Prerequisite: SPA 413, 471.
A study of the theory and practice of using speech materials in hearing evaluations and hearing aid selections; the design and physical characteristics of hearing aids.

499. Research Seminar in Speech Pathology and Audiology. 1–10 hours.

501, 502, 503, 504, 505, 506, 507, 508, 509, 510. Clinical Practice in Speech Pathology. 2 hours each. Max. 6 hours.
Prerequisite: SPA 310, 412 (dependent on content courses and practicum courses taken previously).
Supervised clinical practice in speech pathology including functional and organic disorders; speech problems provided for observation and clinical practice include articulation, voice, delayed speech, stuttering, and aphasia; in addition, speech problems associated with cleft palate, cerebral palsy, and hearing loss are included in the therapy program. As the study progresses in the program, the level of case severity and responsibility will increase.

511, 512, 513, 514. Clinical Practice in Audiology. 2 hours each. Max 6 hours.
Prerequisite: SPA 310, 413 (dependent on content courses and practicum courses taken previously).
Clinical and field experience in audiology including neo-natal testing, pediatric audiology, public school screening, work with the pre-school deaf, auditory training and speech reading, voice measurements and hearing conservation, electro-physiology, neuroaudiology, otologic audiology and geriatric audiology.

534. Classroom Problems in Speech Correction.
Prerequisite: Four courses in education.
Problems of defective speech, common etiologies, identification of speech defects, and the role of the teacher in referral, examination and correction. Clinical demonstrations in cooperation with the Atlanta Speech School.

538. Program Administration in Speech Pathology. 3 hours.
Prerequisite: SPA 310, 474.
Methods for finding, selecting and scheduling speech cases in the public schools, clinics, etc. The organizational and administrative problems in keeping records, reporting and coordinating speech pathology activities. Discussion of professional responsibilities, relationships with other professional persons, and current trends in the profession.

546, 547, 548. Student Teaching in Speech Pathology. 15 hours taken concurrently.

575. Directed Individual Study in Speech Pathology.
Prerequisite: Four courses in speech pathology.

Adaptation of the speech pathology curriculum to the individual needs of mature students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the head of speech pathology and audiology.

576. Directed Individual Study in Speech Pathology.
Prerequisite: Four courses in speech pathology.
Continuation of SPA 575, but content must be different.

578. Speech Reading and Auditory Training. 3 hours.
Prerequisite: SPA 471.
Processes and problems of oral communication by the hearing handicapped; procedures for improving communication by means of speech reading and auditory training.

579. Auditory Rehabilitation of Children.
Prerequisite: SPA 413, 471, 578.
A study of the theories and procedures used in the rehabilitation of both the deaf and hard of hearing child. Both the historical development and current trends in education of the hearing impaired will be reviewed. Supervised clinical practice.

580. Auditory Rehabilitation of Adults. 3 hours.
Prerequisite: SPA 413, 471, 578.
The social, educational, and vocational rehabilitation of hearing handicapped adults. Emphasis will be placed on the adjustment needs of the older person with gradually increasing hearing impairment. Supervised clinical practice.

581. Hearing Conservation.
Prerequisite: SPA 310, 313, 471.
A study of the methods used for the detection of pathological noise and the correction of its effects on the human hearing mechanism in the community, industry and the military.

582. Teaching Language to the Hearing Impaired.
A study of the practices and procedures in teaching language to the hearing impaired, with a review of the historical philosophies and methods, and a review of the current literature.

583. Teaching Speech to the Hearing Imparied.
Theory, principles and procedures of teaching speech to the hearing impaired.

584. Curriculum for the Hearing Impaired.
A study of the planning and presentation of curriculum to the pre-school and elementary hearing impaired, including a review of the program available and techniques in the modification of published programs and book series.

READING EDUCATION (ERD)

Head: Mason. *Staff*: Aaron, Aaron, Callaway, Dinnan, Jerrolds, Myers, Palmatier, Root, Rystrom, Seaton, Simpson.

400. Special Problems in Reading Education.
1–10 hours.

401. The Teaching of Reading. 1–5 hours.
An overview of the teaching of reading, including methods, techniques, and materials, from first through twelfth grades.

402. The Analysis and Correction of Reading Disabilities. 1–5 hours.
Causes of reading disability: methods of diagnosis; procedures and materials for corrective work, group and individual.

403. Teaching Reaching in the Secondary School.
The development of reading skills needed by the students in grades 7–12 for success in school subjects.

404. Adult Literacy–Basic Reading Needs.
An examination of the causal factors contributing to adult illiteracy and of those methods and materials appropriate for teaching adults to read.

405. Materials for Reading Instruction.
An in-depth examination of reading materials from both the theoretical and practical point of view.

442. Reading and Written Discourse for ECE.
1–5 hours.
An understanding of the role of reading as a part of the total school curriculum with special emphasis on the early childhood years.

SCIENCE EDUCATION (ESC)

Head: Butts. *Staff*: Capie, May, Okey, Ricker, Riley, Shrum, Simpson, Williams, Yeany, Zeitler.

335. Basic Curriculum in Science Education.

336. Teaching Procedures in Science Education.

339. Elementary Science Methods. 1–3 hours.
Prerequisite: EEL 334.

345AB. School Practicum in Science Education. 1 hour each.

400. Special Problems in Science Education.
1–10 hours.

442. Science for Early Childhood Education. 1–5 hours.

502. Teaching Science in the Elementary School.
Instructional procedures, materials, and evaluation in teaching biological physical sciences in the elementary school.

546,547,548. Student Teaching in ESC. 5 hours each.

SOCIAL SCIENCE EDUCATION (ESS)

Head: Rice. *Staff*: Keach, Saveland, Schneider, Berryman, Hawkins, Larkins, Hepburn, Goetz, Napier, Van Sickle, Williams.

335. Basic Curriculum.
Prerequisite: EPH 380 or EFN 303 and EPY 304, ESS 335, 336, 345, 401 and 499 are scheduled concurrently in the quarter preceding student teaching in local schools.
Current status and trends with illustrations of selected teaching strategies and media for both cognitive and affective learning.

336. Teaching Procedures.
Development of instructional objectives and the examination and application of instructional procedures, utilization of media and methods of evaluation.

340. Elementary Social Studies Methods. 1–3 hours.
Prerequisite: ECS 334, but usually will be scheduled concurrently with ECS 334.
Study and evaluation of teaching materials and techniques in social studies for elementary schools.

345ABC. School Practicum in Secondary Social Science. 1 hour each.
In-school observation and practical experience.

400. Special Problems in Social Science Education. 1–10 hours.

401. (EAV) Basic Instructional Media Competencies. 3 hours.

442. Social Studies for the Young Child. 1–5 hours.
Methods, materials, and evaluation in social studies in early childhood education.

499. Research Seminar in Social Science Education. 1–10 hours.
Student teaching seminar on selected topics related to curriculum and instruction.

503. Teaching Social Studies in the Elementary School.
The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to elementary school social studies education.

505. Problems of Teaching in Social Science Education.
Design and implementation of teaching strategies and media selection and utilization appropriate to specific cognitive and affective learning problems in the social sciences.

546, 547, 548. Student Teaching in Secondary Social Sciences. 5 hours each. 15 hours taken concurrently.

SPEECH EDUCATION (ESP)

Head: O'Donnell.

336. Teaching Procedures: Speech.
Methods for teaching speech in secondary schools.

345. School Practicum in ESP. 1 hour.

400. Special Problems in ESP. 1–10 hours.

546, 547, 548. Student Teaching in Secondary Speech. 5 hours each.

593. (SPC) Speech Communication for the Elementary School Teacher.

STUDENT TEACHING (EST)

Head: Ahnell. *Staff*: Cole, Goldenberg, Jordan, Lindsey, Reynolds.

400. Special Problems in Student Teaching. 1–10 hours.
Prerequisite: Approval of the department and consent of instructor.

500. Elementary Student Teaching: Curriculum, Materials, and Methods. 10 hours.
Prerequisite: EPY 304, E-335, E-336 or the equivalent, one year of full-time teaching and need credit for student teaching for certification.
Problems of curriculum, materials, and methods for experienced teachers in lieu of regular student teaching. Sectioned by teaching field. Offered only in the first session of the Summer Quarter. Not open to students following the regular program for certification.

501. Junior High Student Teaching: Curriculum, Materials, and Methods. 10 hours.

502. Secondary Student Teaching: Curriculum, Materials, and Methods. 10 hours.

503. Art Student Teaching: Curriculum, Materials, and Methods. 10 hours.

504. Music Student Teaching Curriculum. 10 hours.

505. EBE Student Teaching: Curriculum. 10 hours.

506. PED Student Teaching: Curriculum, Materials, and Methods. 10 hours.

510. Fundamentals in the Supervision of Student Teaching.
Prerequisite: Limited to supervising student teacher personnel and consent of instructor.
Introduction to the theory, principles, and practices in the supervision of student teaching and other professional laboratory experiences.

511. Internship in the Supervision of Student Teaching.
Prerequisite: EST 510, a student teacher has been assigned, and consent of instructor.
A study seminar program; directed supervision of student teaching, and other field experiences.

512. Investigations in the Supervision of Student Teaching.
Prerequisite: EST 510 and 511 and consent of the instructor.
An advanced course in the supervision of student teaching, emphasizing research in problems of student teaching, and other laboratory experiences.

546, 547, 548. Student Teaching (By Departments). 5 hours each.
Prerequisite: Introduction to education, educational psychology, curriculum and methods, and minimum grade of "C" in required education and teaching field courses. Must also have minimum grade point average required by department in students' teaching field.
Prospective teachers are placed in selected cooperating schools for an entire quarter, during which they are supervised in actual teaching in their chosen field.

VOCATIONAL EDUCATION (EVO)

Head: O'Kelley. *Staff*: Bailey, Bailey, Boyd, Calhoun, Combs, Cross, Cundiff, Dickerson, Dupue, Hankin, Kinzey, Milliken, Nix, Obreiter, Parr, Pollock, Sanders, Scott, Scott, Seymour, Sheppard, Simpson, Slusher, Stewart, Sumner, Taylor, Taylor, Uthe, Weaver.

410. Principles and Practices of Career Education.
An overview of Career Education including major theories of career development and adjustment, program characteristics, leadership and administration, and curriculum materials and other resources.

501. Individualizing Instruction for Vocational Education.

503. Coordination of Cooperative Vocational Education Programs.
Standards and selection of students and training stations and guidance of students in cooperative vocational education programs.

505. Problems of Teaching Vocational Education.

526, 527, 528, 529, 530. Basic Theory in Vocational Education.

546, 547, 548. Internship in Vocational Education. 5 hours each.
Courses leading to certification in various teaching fields in vocational education are listed by departments.

Agricultural Education (EAG)

Head: O'Kelley.

335. Curriculum Planning in Agricultural Education.

336. Teaching Procedures in Agricultural Education.

349. Seminar in Agricultural Education. 3 hours.
Prerequisite: EAG 546, 547, 548.
Problems emerging from experiences in student teaching.

400. Special Problems in Agricultural Education. 1–10 hours.

505. Problems of Teaching Agricultural Education.

546, 547, 548. Student Teaching in Agricultural Education. 5 hours each.

Business Education (EBE)

Head: Calhoun.

300. Beginning Shorthand.
Shorthand theory, development of skill in wordbuilding, writing, and dictation of practiced material from business vocabulary.

301. Intermediate Shorthand.
Prerequisite: Business Education 300 or equivalent.

Theory reinforcement, improving speed and accuracy in taking dictation on both practiced and new-matter materials, and transcription at the typewriter.

302. Advanced Shorthand.
Prerequisite: Business Education 301.
Development of dictation speed on unfamiliar material; emphasizes handling of materials, vocabulary shortcuts, and efficient transcription techniques, and production of mailable transcripts.

303. Beginning Typewriting.
Introductory typewriting for personal or vocational use. Emphasis is placed on the mastery of touch control of keyboard characters and operator parts. Basic introductory skills are acquired in correct typewriting techniques, composing, and application of typewriting skill to simple manuscripts, tabulation, etc.

305. Advanced Typewriting.
Emphasizing the application of typewriting skills to production of letters, statistical copy, tabulation, forms and manuscripts.

310. Business Office Procedures.
Prerequisite: Business Education 302, 305 or equivalent.
Secretarial traits and duties; filing; operation of dictating, duplicating, calculating and other office machines in a simulated office setting.

311. Business Machines.
Practicum in the use of calculating machines, accounting machines, and key-punch machines with application to student's area of specialization.

335. Basic Curriculum in Business Education.
Corequisite: Business Education 336.
Determining curriculum content and planning instructional programs in business education.

336. Teaching Procedures in Business Education.
Corequisite: Business Education 335.
Study and evaluation of teaching materials, methods, and techniques in business education. Includes directed observation, lesson planning, and field experience in individual laboratory.

345ABC. Practicum in Business Education. 1 hour each.
Prerequisite: Junior or senior standing.
A two-week laboratory in a public school designed to introduce the future teacher to many activities centered about the opening of the school year.

400. Special Problems in Business Education. 1–10 hours.

401. Business Communication.
Principles and practices in the oral and written communication of business; collecting, organizing, and interpreting data.

501. Theory and Principles in Shorthand and Typewriting.
Prerequisite: Business Education 302, 305, 336, or equivalent.
Teaching theory, psychological principles of skill building, and evaluation.

502. Principles and Problems of Basic Business for Teachers.
Development of objectives, materials, procedures, student motivation and evaluation of the basic business fields.

503. Advanced Office Practice and Machines for Teachers.
Module development, teaching procedures, equipment and material selection, standards, and evaluation in the teaching of office machines and office practice.

504. Principles and Problems of Bookkeeping and Accounting for Teachers.
Materials, teaching procedures, standards and evaluation in the teaching of the accounting cycle.

505. Problems of Teaching Business Education.
Instructional objectives, procedures and evaluation of teaching in terms of student growth.

507. Office Management.
Scientific office management: principles, equipment, supervision, office records and reports, methods and procedures, environment, selection and training of office personnel.

508. Business Data Processing for Teachers.
Functions and techniques of data handling, unit record systems, electronic data processing systems, number systems, central processing unit, internal processing, the programming function, input-output, media, magnetic tapes.

509. COBOL Business Applications for Teachers.
Application of basic knowledge of programming to problems in inventory control, accounts receivable, and payroll. Attention is given to methodology of teaching these applications.

510. Systems Analysis and Design for Teachers.
Provides technical background and knowledge for teaching advanced programming on systems design. Includes project management, documentation standards, hardware, software, forms design, feasibility studies, file organization, systems design, and development.

512. History and Philosophy of Vocational Business Education.
Origin and development of vocational education with emphasis upon business education; federal legislation for vocational education, and administration of federally aided programs; vocational and technical education programs in industry; changing manpower needs and new media and retraining procedures as instruments for updating vocational programs.

546, 547, 548. Student Teaching in Business Education. 5 hours each.

576. Family Finance Education.
Economic factors related to sound consumer education; planning income and expenses for individuals and families, sources of family income, budgets, banking services and their use, income tax records and returns, property and other taxes, installment buying, risks, and planning for growth and stability in family income.

Distributive Education (EDE)

Head: Sanders.

100. Introduction to Distributive Education.
Aims, organization, and activities of a distributive education program.

200. Distributive Occupational Experience: Basic.
Overview of on-the-job experiences in distributive education with work experience in marketing and distribution.

301. Organization of Distributive Education.
The distributive education program at the Federal, state and local level; duties of the teacher-coordinator; operation of the adult distributive education program; visits to programs in operation.

335. Basic Curriculum in Distributive Education.

336. Teaching Procedures in Distributive Education.

345ABC. School Practicum in Distributive Education. 1 hour each.

400. Special Problems in Distributive Education. 1–10 hours.

499. Research Seminar in Distributive Education. 1–10 hours.

500. Distributive Occupational Experience: Sales.
Directed work-experience in cooperating distributive business; 500 hours in sales or sales-supporting business.

501. Distributive Occupational Experience: Junior Management.
Directed work-experience in cooperating distributive business; 500 hours in supervisory and junior management positions.

502. Adult Distributive Education.
Objectives, problems, organization, and promotion of adult distributive education training.

505. Problems of Teaching Distributive Education.

506. Curriculum Planning in Distributive Education.

546, 547, 548. Student Teaching in Distributive Education. 5 hours each.

Health Occupations Education (EHO)

Head: Milliken.

335. Curriculum Planning for Health Occupations.

336. Teaching Procedures in Health Occupations Education.

345ABC. School Practicum in Health Occupations Education. 1 hour each.

400. Special Problems in Health Occupations Education. 1–10.

500. Performance Specification in Health Occupations.
Identifying and specifying performance requirements for jobs in health as a basis for instructional planning.

501. Instructional Strategies in Health Occupations Education.
Means for optimizing learning conditions for students of varying ability levels enrolled in health occupations education programs.

502. Health Occupations Program Deisgn.
Factors impinging upon selection of curriculum design for health occupations education programs.

503. Instructional Planning in Health Occupations Education.
Procedures for selecting and organizing course content maximizing media utilization, managing the learning environment, and assessing student achievement in classroom, laboratory, and clinical settings.

546, 547, 548. Student Teaching in Health Occupations Education. 5 hours each.

Home Economics Education (EHE)

Head: Cross.

335. Curriculum Planning in Home Economics Education.

336. Teaching Procedures in Home Economics Education.

345ABC. September School Practicum in Home Economics Education. 1 hour each.

400. Special Problems in Home Economics Education. 1–10.

546, 547, 548. Student Teaching in Home Economics Education.

Industrial Arts Education (EIA)

Head: Pollock.

100. General Shop. One single and four double periods.
General survey of a wide variety of materials, tools, and procedures, with emphasis on planning, designing, assembling, and packaging a typical finished product.

101. Beginning Woodwork. One single and four double periods.
A beginning course in woodworking where consideration is given to the tools, materials, processes, planning and construction of wood products, as they relate to Industrial Arts and our society.

102. Industrial Arts Drafting. One single and four double periods.
A beginning course of drafting in which a study is made of reading and writing a graphic language. Consideration is given to drafting instruments, lettering, geometric construction, orthographic projection, and pictorial drawings.

300. Advanced General Shop. One single and four double periods.
Prerequisite: Basic industrial arts courses or permission.
Practices of working with tools, materials, and methods of managing an educational workshop.

305. Advanced Woodwork. One single and four double periods.
Prerequisite: Beginning Woodowrk 101
A second course in woodworking for Industrial Arts students, where consideration is given to planning, equiping, organizing and methodology of teaching woodworking. Emphasis is placed on the management practices, production practices, and personnel practices as they relate to the construction industry.

310. Metal Technology. One single and four double periods.
Planning, construction, and finishing of projects in metal, development of skill in the use of hand tools and hand operated metal working equipment.

315. Power Machines. One single and four double periods.
Practices of processing energy; converting, transmitting, and controlling power.

320. Basic Electrical Technology. One single and four double periods.
Practices of producing electricity and applying it for heat, light, and power.

326. Advanced Drafting. One single and four double periods.
Prerequisite: Industrial Arts Drafting 102.
A continuation of Beginning Drafting 102. Consideration is given to perspective drawings, auxiliary drawing, section drawings, developments, inking and reproduction drawings.

328. Industrial Arts Design. One single and four double periods.
Prerequisite: EIA 100, 101, 102, 310, 315, 320.
A basic course in design in which the common elements, principles and factors which influence design are studied and applied. Consideration is given to teaching techniques and methodology of design as it relates to Industrial Arts.

330. Development of American Industries.
A survey of American Industries with emphasis on management, common industrial materials and their production.

332. Industrial Arts and Handicrafts for Teachers. One single and four double periods.
The place and type of industrial arts suitable for adults, camp counselors, teachers, homemakers, and others interested in creative activities.

335. Curriculum Planning in Industrial Arts Education.
Review & study of Industrial Arts curriculum patterns in the public schools.

336. Teaching Procedures in Industrial Arts Education.
Review & study of procedures & methodology for Industrial Arts in public schools.

400. Special Problem in Industrial Arts. 1–10 hours.
Individual study & research in an Industrial Arts area.

502. Advanced Metal Technology. One single and four double periods.
Prerequisite: Metal Technology 310.
Individual problem in advanced metal technol-

ogy, with experience in machine tools, welding and foundry.

504. Advanced Electronics Technology. One single and four double periods.
Prerequisite: Basic Electrical Technology 320.
Practices of communicating through electrical media.

505. Problems of Teaching Industrial Arts.
Prerequisite: Industrial Arts Design 328.
Developing classroom & laboratory techniques & materials to resolve instructional problproblems.

520. (EAV) Photography in Instruction. Three lectures, two double lab periods.
Prerequisite: EAV 501.
Basic principles, skills, and techniques of photography and their application to problems of instruction.

521. (EAV) Graphic Technology. Three lectures, two double lab periods.
Demonstrations, lectures, and laboratory sessions deisgned to provide majors with competencies in graphic technology.

522. (EAV) Advanced Graphic-Photographic Techniques. Three lectures, two double lab periods.
Prerequisite: EIA 520/521.
An advanced projects course in graphic and photographic production.

546, 547, 548. Student Teaching in Industrial Arts. 5 hours each.

Trade & Industrial Education (ETI)

Acting Head: Cundiff.

335. Basic Curriculum in Trade and Industrial Education.

336. Teaching Procedures in Trade and Industrial Education.

349. Seminar in Trade and Industrial Education. 3 hours.

400. Special Problems in Teaching Trade and Industrial Education. 1–10 hours.

500. Occupational Analysis.
Techniques in analyzing occupations and jobs within an occupation for instructional content.

501. Principles and Practices in Teaching Industrial Education.
Principles and practices of teaching manipulative skills and related technology; organization of subject matter, lesson planning and student appraisal.

502. Curriculum Planning for Trade and Industrial Education.
Principles and procedures in the development of curricula for trade and technical courses.

503. Instructional Materials Development in Trade and Industrial Education.
Prerequisite: ETI 502.
Development of courses of study, course outlines, instructional material, and organization of course content.

504. School Laboratory Organization and Management.
Principles involved in the physical planning of school shops and laboratories; selection of tools and equipment.

505. History and Policies of Trade and Industrial Education.
History of trade and industrial education; contributions of vocational education; and principles and laws under which programs operate.

506. Administration and Supervision of Trade and Technical Programs.
Administrative and supervisory techniques of trade and technical programs as related to recent legislation.

508. Development Diversified Cooperative Training Programs.
Analysis of community training needs; relations between school, community and industry; and organization of adult programs.

509. Selection and Utilization of Instructional Material for Cooperative Programs.
Selection, organization and application of source material for general and direct related study in part-time cooperative classes.

510. Problems in Trade and Industrial Education.
Specialized training appropriate to the needs of the individual.

511. School Laboratory and Industrial Safety.
Principles and practices involved in safety in school shops and laboratories.

546, 547, 548. Student Teaching in Trade and Industrial Education. 5 hours each.

THE SCHOOL OF ENVIRONMENTAL DESIGN

Courses in the School of Environmental Design are designated LAR, except for ENV 400 and ENV 476.

300. Basic Design Studio I. Five laboratory periods.
Basic principles of design theory and philosophy. Application through the use of two and three dimensional problems involving form, light, color, and texture.

305. Basic Design Studio II. Five laboratory periods.
Prerequisite: Landscape Architecture 300 and 343.
The design concept: research, analysis, synthesis. A linking together of basic design philosophy as outlined in Landscape Architecture 300, the design concept and practical design situations.

343 Graphics I. Five laboratory periods.
Princples of orthographic projection, isometric drawing, one and two point perspective. Emphasis on lettering, composition and graphic presentation.

344. Graphics II. Five laboratory periods.
Prerequisite: Landscape Architecture 343.
Use of perspective, drawing and various rendering techniques in presentation plans.

372. History of Landscape Design. Five lecture periods.
Development of the art of landscape design from early cultures to the present with special stress upon the transition of styles and the development of the naturalistic and contemporary periods.

373. History and Theory of Architecture. Five lecture periods.
Prerequisite: Landscape Architecture 372 or consent of instructor.
A survey of the principal periods of architectural history with particular emphasis on the rationale of each development. Open to all majors of all colleges and departments.

303. Plant Materials. Five lecture periods.
Prerequisite: Botany 121, Horticulture 325 or 362.
A study of plant materials with emphasis on plant keying, identification and use. Evergreen trees, shrubs and vines.

304. Planting Design I. Five laboratory periods.
Prerequisite: Landscape Architecture 303, 343, 344, 351. Analysis of plant elements and form. Emphasis on plant function in the landscape composition. Basic problems in planting design of small areas with emphasis on orientation, arrangement and human needs.

313ABC. Landscape Design. Five laboratory periods.
Prerequisite: Landscape Architecture 343, Agricultural Engineering 210 or other drafting experience.
Problems in landscape design.

315. Introductory Landscape Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 305 and 350.
Small scale projects involving elementary problems of design. Emphasis on circulation patterns, material characteristics and the use of small elements of design in the landscape.

316. Intermediate Landscape Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 315.
Intermediate scale projects involving a variety of topographical characteristics, design elements, space and circulation requirements.

317. Intermediate Landscape Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 315 and 316.
Emphasis on park and recreational design for various population requirements.

318. Advanced Landscape Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 315, 316, and 317.

Studies involving a complexity of design elements featuring land use, ecology and circulation problems at the large scale and spatial and natural relationships at the human scale.

319. Advanced Landscape Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 318.
Continuation of LAR 318 with emphasis on the preparation of detailed design for projects.

320. Architectural Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 305.
Exploration of material and structural logic as the basis for architectural design. Consideration of climatic and environmental aspects of design.

322. Intermediate Architectural Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 320.
Design involving larger structures, more complex circulation requirements, modular coordination and the philosophy of architecture.

323. Landscape Ecology. Five lecture-laboratory periods.
Prerequisite: Botany 121, physical science electives.
Exploration of the ecological relationship of man and his environment in an effort to seek a scientific basis for planning action.

333. Advanced Architectural Design Studio. Five laboratory periods.
Prerequisite: Landscape Architecture 320.
Projects requiring the solution of structural, material and circulation functions. Further study of design philosophy.

340. Professional Practice in Landscape Architecture. Five lecture periodperiods.
Professional practice and ethics; contracts, reports, and specifications.

350. Landscape Engineering. Five lecture lab periods.
Prerequisite: Agricultural Engineering 210 or consent of instructor.
Review of contour principles, grading, earth volume calculations, drainage, coordinates and layout techniques. Introduction to the automobile as it relates to site planning and low-speed road design.

351. Plant Materials.
Prerequisite: Botany 121, Horticulture 325 or 362.
A study of plant materials with emphasis on identifying characteristics, natural habitat and cultural requirements. Primarily trees, shrubs and vines.

352. Plant Materials. 3 periods.
Prerequisite: Botany 121, Horticulture 101.
A continuation of Landscape Architecture 351 with emphasis on herbaceous plant materials.

354. Planting Design II. Five laboratory periods.
Prerequisite: Landscape Architecture 304.
Use of plant material in relation to other landscape elements. Specific prob'ems calling for the knowledge of plant characteristics and requirements. Preparation of planting plans and specifications.

355. Terminal Problem. Five laboratory periods.
Prerequisite: Second quarter senior standing or the consent of the dean.
A comprehensive problem in Environmental Design in which the student is able to demonstrate the proficiency acquired from the program of study.

357. Landscape Construction. Five laboratory periods.
Prerequisite: Landscape Architecture 344.
An introduction to wood construction, sprinkler irrigation, retaining wall calculations, and construction drawings. Investigation of construction materials in the landscape.

358. Advanced Landscape Engineering. Five laboratory periods.
Prerequisite: Landscape Architecture 350.
The application of site engineering principles to specific design projects.

400. (ENV) Man and the Physical Environment.
Prerequisite: Upper division standing or consent of instructor.
A survey course for non-majors which investigates the natural and man-made forces affecting environmental quality and change. Developed to prepare the student for a participating role in environmental issues. Not open to landscape architecture majors.

410, 411, 412. LAR Internships. 5 hours each.
Prerequisite: Junior standing or special permission.
Provides credit for professional office experience under the supervision of registered landscape architects or related practitioners (architects, engineers, planners). A minimum of two months full time supervised employment per 5 credit hours.

418AB. Independent Projects I and II. 5 hours each.
Prerequisite: Fifth year standing and permission of Dean.
Independent projects allowing supervised research into specialized problem areas of landscape architecture. May be substituted for other fifth year course work.

453. City Planning.
Prerequisite: Landscape Architecture 372.
Background course in city planning covering the history and bibliography of the subject and introducing the students to modern trends in planning. Designed as a foundation for further study of professional planning.

476. (ENV) Restoration and Preservation of Historic Buildings and Sites. Two lecture periods.
Survey of European and American historic restoration and preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

496H, 497H, 498H. Independent Projects in Landscape Architecture. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis in Landscape Architecture.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field. This course will substitute for LAR 355.

520. (GLY) Environmental Geology.
Discussion of geological materials and processes with emphasis on environmental interpretation with respect to planning, construction practices and land use. Role of water, potentially hazardous processes and earth (minerals) resources in this context. Site evaluation, sequential—impact assessment. Course primarily for School of Environmental Design students. May not be taken for major credit in Geology.

525. Regional Recreation Planning. Three 1-hour lectures and two 1-hour lab periods.
Prerequisite: Upper division standing and Recreation 384 or Forest Resources 355.
An approach to regional scale recreation planning. Studies of existing regional land use recreation programs, their significance and implications to individual park planning. A look at space requirements, policies and financial considerations in the design profession.

527. Park Design. 3 hours. One 1-hour lecture period and two 1-hour lab periods.
Prerequisite: Landscape Architecture 525.
The study and formulation of master plans for specific recreational sites. Problems in diagramming of land use, site surveys, staging developments and planting design principles.

THE SCHOOL OF HOME ECONOMICS

CHILD AND FAMILY DEVELOPMENT (CFD)

Head: Sheerer. *Staff*: Addison, Balswick, Brody, Brooke, Endsley, Gordon, Hobbs, Kohl, Murphy, Osborn, Paguio, Price-Bonham, Smith, Spigelmyer, Stoneman, Walker, Walters, Yang.

210. Development Within the Family.
Individual and family development during the life cycle, with special emphasis upon family interpersonal relationships.

301. Special Problems in Child and Family Development. 1–20 hours.
Prerequisite: 20 hours of senior division coursework.
Independent study and research in the undergraduate program.

343. (ECE) Teaching and Learning Strategies I. 3 hours.
Prerequisite: ECE 302 (6 credits), CFD/PSY 395, and/or concurrent with EFN 303.
An examination of the naturally occurring behavior of young children as reproduced from a live classroom setting (both large and small groups). Students will be given extensive practice in developing skills in observation leading to accurate, objective recording and measurement of children's behavior. Specific attention will be directed to the topics of child communication, individual differences, and children's needs. The core activities of the course are based upon the usage of multimedia curricula produced in a natural classroom setting.

390. Prenatal and Infant Development. Four lectures and two periods of supervised observation in the Infant Center.
A study of the adjustment of the young family through pregnancy and childbirth. Special emphasis is given to the physical, mental, emotional, and social development of the child up to two years of age.

393. (SOC) Family Relations.
Personal development and family living, planning for marriage, achieving a happy marriage.

395. (PSY) Introduction to Child Development.
Four lectures, one laboratory period, and one discussion period.
Prerequisite: Psychology 101.
A survey of the physical, cognitive and personality development of children with emphasis upon the years two to ten.

407. A Survey of Marriage and Family Problems.
Prerequisite: Sociology 105 or Psychology 101 and consent of the instructor.
Study of stresses that produce problems in the modern family; e.g., marital and sexual adjustment, divorce, alcoholism, illegitimacy, etc.

408. (PSY) Development of the Young Child.
Four lectures and two periods of supervised observation in the child development laboratories.
Prerequisite: Psychology 101 and Child and Family Development 395 or equivalent.
The physical, mental, emotional, and social development of the preschool child, and the origins of psychological processes in laboratory work; special reference to techniques of guidance.

409. Infant Development.
Prerequisite: Child and Family Development 408 or consent of instructor.
Emotional, social, intellectual, and physical development in infancy. Supervised observation in Infant Center and in selected homes.

461. (SOC) The Family.
Family study utilizing data from the field of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

462. Women in the Family and Society.
Women's roles in the family and society—the range of occupational, volunteer, and other societal roles open to women; changing societal constraints on women's roles; conflicting demands on societal and family roles; strategies for handling conflicts; effects of changes in women's roles on men's roles.

492. Individual and Family Development Facilitation.
Prerequisite: Child and Family Development (Psychology) 395; Child and Family Development (Early Childhood Education) 496 or equivalent.
Developing skills for observing social interaction and selected techniques for facilitating optimal development of individuals and families in social contexts.

495. Contemporary Family Life.
Prerequisite: Work in child development, or family relations, Sociology 105 or 461.
A study of the changing American family and of the inter-personal relationships of family members at each stage in the family life cycle.

496. (ECE) Guidance of Parents and Children.
Prerequisite: CFD 395 or equivalent.
Principles, techniques, and application for teaching parents and teachers in the guidance of growth and development of children and youth. Opportunities for observation and participation in child-child, child-parent, child-teacher, and teacher-parent observation.

496H, 497H, 498H. Independent Reading.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

497. Marriage, Family, and Human Sexuality.
Prerequisite: Consent of instructor.
A survey of various attitudes, values, substantive, and theoretical materials on human sexuality, particularly the relation of these two and implications for interpersonal relations in marriage and the family.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

591. Creative Activities in Nursery School and Kindergarten.
Prerequisite: Child and Family Development 395 and one additional related senior division course.
Selected types of creative activities for children of the pre-school years, including literature, art, mathematics, science, music, nature study and other materials for young children. Practical experience with these in child development laboratories.

594. Nursery School and Kindergarten Theories and Administration. Four lectures and two periods of supervised practice in the child development laboratories.
Prerequisite: Child and Family Development (Psychology) 395 and one additional related senior division course.
Instruction and observation in the basic principles of group management of children from two through five years; guidance in selection of equipment and play materials; administration and organization of nursery schools and kindergartens; visitation of pre-primary centers.

595. (EXC) Teaching the Severely Mentally Retarded.
Prerequisite: Exceptional Children 500, 504, Child and Family Development (Psychology) 395.
Considers the growth and development of the severely mentally retarded and programs maintained in public schools, institutions, private agencies, and sheltered workshops to prepare them for optimum functioning with emphasis on family life, mobility, employment, literacy, etc., from both the curricular and methodological aspects of education.

598, 599. Practicum in Child and Family Development. 5 hours each.
Prerequisite: Child and Family Development 395, 591 and/or consent of instructor.
Supervised experience in child and family development in a variety of appropriate settings.

CLOTHING AND TEXTILES (CLT)

Head: Perenich. *Staff*: Harvey, Luffman, Walker, Willett.

122. Basic Clothing Construction. 3 hours. Three double laboratory periods.
Prerequisite: Clothing and Textiles 210, or consent of instructor.
Basic principles of clothing construction in relation to fabric, fit, and design of the garment. Open to non-home economics majors with consent of instructor.

210. Textiles and Clothing for Consumers.
Introduction to textile study with emphasis on selection, use, performance and care of textile products in near environment. Clothing selection for individuals with recognition of aesthetic,

social, psychological and economic factors related to dress.

301. Special Problems in Clothing and Textiles. 1–20 hours.
Prerequisite: 20 hours of senior division coursework.
Designed for the senior major to permit independent study and research in the undergraduate program.

321. Advanced Clothing Selection and Construction. Four double periods.
Prerequisite: Clothing and Textiles 122 and 210.
Advanced dressmaking techniques in handling various types of textile fabrics; clothing selection based on aesthetic, physical and psychological factors.

323. Clothing for the Family.
Prerequisite: Clothing and Textiles 210.
Physiological, psychological, artistic, social, and economic aspects of clothing as related to clothing needs. Individual reports, field trips. Open to non-majors, all areas, with consent of the instructor. Offered Winter Quarter.

333. Fashion Product Analysis and Selling. Four lectures and one laboratory period.
Prerequisite: Clothing and Textiles 321 and Marketing 360, or consent of instructor.
Essentials of buying and selling of textile and non-textile apparel and furnishings. Differences due to material, manufacturing processes, resources, and markets. Functional relationships of retail stores, selling fashion merchandise, and practical experience using selling techniques. Offered Fall and Winter Quarters.

334. Introduction to Fashion Merchandising. Four lectures and one laboratory period.
Prerequisite: Clothing and Textiles 333, or consent of instructor.
Fashion merchandising, organization of merchandising division market resources and representation for apparel trade practices, and buying ethics, and merchandising budgeting. Offered Winter and Spring Quarters.

335. Fashion Promotion and Display. Four lectures and one laboratory period.
Prerequisite: Clothing and Textiles 334, or consent of instructor.
A study of practices and application of techniques in fashion coordination and fashion promotion and display. Offered Fall and Spring Quarters.

360. Advanced Textiles. Four double periods.
Prerequisite: Clothing and Textiles 210 and Chemistry 111 or 121.
Advanced study of fiber properties and fabric characteristics. Introduction to basic testing procedures used on analysis for end-use performance. Special projects; field trips. Offered Fall, Winter, and Spring Quarters.

363. Costume Design. Three lectures and two laboratory periods.
Prerequisite: Clothing and Textiles 321 and Art 120 or 300.
Study of apparel design in relation to elements and principles involved. Influence of the fashion industry and socio-cultural factors. Application to the consumer, the seamstress, and the creator of clothing design. Open to non-majors with consent of instructor. Offered fall quarter.

397. (HFM) Creative Materials and Activities.
Functions of creative materials and activities in the home in developing a closer family unity; types of creative activities which can be carried on in the average home. Offered winter and spring quarters.

463. Historic Costume.
Prerequisite: Clothing and Textiles 321 or consent of the instructor.
A study of historic costume from ancient times to the present; socio-economic, political and religious influences on dress. Offered fall quarter.

472. European Foreign Study Tour in Clothing and Textiles.
Prerequisite: Clothing and Textiles 463 or consent of instructor.
A study on location of fashion merchandising, costume and textiles in various foreign cities of specific interest.

496H, 497H, 498H. Independent Reading. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

561. Clothing and Textile Economics.
Prerequisite: Clothing and Textiles 321 and Marketing 360, or consent of instructor.
Organization and functions of clothing and textile industries. Factors related to production, distribution and consumption of apparel and household textiles; special problems; field trips. Offered winter quarter.

562. Tailoring. Four double periods.
Prerequisite: Clothing and Textiles 321.
Planning and making a tailored ensemble; techniques employed in custom made garments. Offered winter and summer quarters.

563. Illustrative Materials in Clothing and Textiles. Four double periods.
Prerequisite: Clothing and Textiles 321.
Preparation of illustrative materials on problems related to selection, construction, and care of clothing and textiles. Designed for teachers, county extension agents, and other specialized groups. Offered summer quarter.

564. Pattern Design and Draping. Four double periods.
Prerequisite: Clothing and Textiles 321 and 562 or consent of instructor.
Making and using a master pattern in designing and constructing garments; emphasis on artistic effects in color, line and texture. Offered spring quarter.

565. Techniques in Construction on Current Fabrics. Four double periods.
Prerequisite: Clothing and Textiles 321.
Planning, constructing, and evaluating garments and techniques using knits and specialty fabrics.

FOODS AND NUTRITION (FDN)

Head: Berdanier. *Staff*: Caster, Green, McNeil, Morrison, Peifer, Wang.

210. Human Nutrition and Food.
Relationship of nutritional needs and food choices to the optimal health of the individual.

301. Special Problems in Foods and Nutrition. 1–20 hours.
Prerequisite: 20 hours of senior division coursework.
Designed for the senior major to permit independent study and research in the undergraduate program.

306. Foods. Three lectures and two laboratory periods.
Prerequisite: Foods and Nutrition 210 and Chemistry 261.
The application of physical and chemical properties of foods to the preparation and storage of food products.

315. Food Preparation. Three lectures and two 2-hour laboratory periods.
A basic course in Foods and Nutrition for non-HEC majors which relates the selection, purchasing and creative preparation of food to individual needs.

350. Advanced Meal Planning and Serving. Three lectures and two double laboratory periods.
Prerequisite: Foods and Nutrition 210. Basic principles of food preparation in relation to meal management and meal service.

351. Foundations of Nutrition.
Prerequisite: Zoology 101, or Biology 101, or Foods and Nutrition 210; and Chemistry 261.
Basic principles of human nutrition with emphasis on biochemical function and role of nutrients on health status; sources of nutrients; and factors affecting nutrient requirements of individuals.

354. Quantity Cookery. One lecture and four double laboratory periods.
Prerequisite: Foods and Nutrition 306.
A study of cookery methods applicable to the preparation of foods for institutional or quantity service. Provides for use of institutional equipment, determination of food costs, experience in large cafeterias, and the planning and serving of meals.

372. Institution Management.
A study of the problems involved in the management and organization of public and private institutions such as hospitals, school food departments, and commercial units; selection of material and equipment; planning and placing equipment in food units.

391. Dietetic Practicum.
Prerequisite: Basic courses in student's major; junior or senior status; or permission of the Foods and Nutrition Department.
Supervised work in dietetics.

419. (FS) Nutritional Aspects of Food Science.
Prerequisite: Food Science 414, Biochemistry 301 or permission of instructor.
A study of the nutritional properties of food, and the effects of modern technology on nutritional quality.

426. (FS) Sensory Principles and Practices.
Prerequisite: Background in Home Economics or Agricultural Science or permission of instructor.
The sensory properties of foods, methods for the evaluation of color, flavor, texture, appearance and other qualities, the relations of sensory qualities to chemical or physical attributes, and experimental design and the analysis of data will be studied.

441. Advanced Nutrition I.
Prerequisite: Foods and Nutrition 351; Veterinary Physiology and Pharmacology 310; Biochemistry 310.
Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the major nutrients, with special emphasis on the relationship between

diet and performance under varying conditions of age and health.

442. Advanced Nutrition II.
Prerequisite: Foods and Nutrition 441.
Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the vitamins and inorganic nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

450. Introduction to Experimental Foods. Two lectures and two 3-hour laboratory periods.
Prerequisites: Chemistry 261 or equivalent.
Study of physical and chemical properties and changes in foods that influence quality of foods and food products. Experimental methods used in preparation of confections, gels, fruits and vegetables, baked products and meats.

451. Evaluaton of Foods and Food Products. Four lecture periods and two hours laboratory and field work.
Prerequisite: Foods and Nutrition 306 or 350 and 351.
A study of food products currently used for human consumption in the home and in quantity food service; criteria for evaluating new food items and the effects of new processes on edible quality and nutritive value.

453. Nutrition in Disease. Four lectures and one 2-hour laboratory period.
Prerequisite: Foods and Nutrition 441.
Modification needed in normal diet in treatment of various diseases. Special emphasis is given to the study of digestive diseases, metabolic disorders, diseases of the blood and to cardiovascular and renal disorders.

454. Experimental Foods. Lecture and arranged laboratory with independent research.
Prerequisite: Chemistry 261 or equivalent.
Introduction to experimental design, library research and objective and subjective methods for evaluating food quality. Influence of physical and chemical characteristics of meats, batter, dough, and fats on the quality of prepared products.

455. Maternal and Child Nutrition. Four lectures and one 2-hour laboratory period.
Prerequisite: Foods and Nutrition 442.
Fundamental principles of nutrition during pregnancy, lactation, infancy, and early childhood. Laboratory work in maternity clinics, infant laboratory, nursery schools, and other appropriate community agencies.

458. Readings in Nutrition.
Prerequisite: Foods and Nutrition 351 or equivalent.
Recent developments and the present status of knowledge on selected topics from the field of nutrition. The course is designed specifically for those who wish to bring their knowledge of nutrition up to date.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500. Nutrition Related to the Human Life Cycle.
A survey of nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to the nutritional needs during pregnancy, infancy, and early childhood and the gerontological-nutritional needs. The subject matter of the course will be presented for non-majors in Foods and Nutrition.

572. Advanced Institution Management Practice. One hour conference and four 2-hour laboratory periods.
Prerequisite: Food and Nutrition 372, 354, and 574 or consent of instructor.
Principles of management and analysis of practices observed in management and operation of institutional food service.

574. Institution Food Purchasing.
Prerequisite: FDN 210.
A study of storage, net yields, specifications, grading, cost control and distribution of food and food products.

HOUSING, FURNISHINGS, AND HOME MANAGEMENT (HFM)

Head: Montgomery. *Staff*: Clendening, Edwards, Holcomb, Paynter.

210. Shelter and Man.
A study of structures, furnishings, equipment and environmental surroundings man chooses for his family's shelter and the influence of human needs, values, resources and goals on his decisions.

301. Special Problems In Housing and Home Management. 1–20 hours.
Prerequisite: 20 hours of Housing, Furnishings, and Home Management coursework or consent of instructor.

Designed for the senior major to permit independent study and research in the undergraduate program.

343. Selection, Use and Care of Household Equipment. Two lectures and three double laboratory periods.
Prerequisite: Foods and Nutrition 210; Housing, Furnishings, and Home Management 210; Clothing and Textiles 210.
A study of household equipment in relation to principles of operation. Basic information about utilities, kitchen and laundry planning and home lighting.

364. Principles of Family Economics.
Prerequisite: Economics 105.
Changes in economic requirement during the family life cycle; forces affecting the economic welfare of families in this country. Focused on consumer credit, savings and investment, insurance, home ownership and estate planning.

365. Family Well-Being and Economic Conditions.
Prerequisite: Economics 105.
Examination of contemporary economic problems that affect the well-being of families in the United States. Examples are affluence and poverty, monetary and fiscal policies as they affect families, efficiency of the delivery of public services in the area of health, education, subsidized housing, etc.

367. Family Management Analysis. 3 hours.
Prerequisite: Housing, Furnishings, and Home Management 368.
Emphasis is on the development of problem-solving skills and management of resources available for family use through the use of case studies. Experience in writing and analyzing studies of families.

368. Individual and Family Management.
Prerequisite: Senior standing.
Survey of basic concepts in individual and family management such as human value orientations, individual and group decision making and creation and utilization of resources. Special emphasis will be placed on application of concepts to unique managerial situations encountered in day to day living.

369. Home Management Residence Laboratory.
Prerequisite: Housing, Furnishings, and Home Management 343 and 368.
Informal laboratory experience for integrating competencies from all areas of home economics with those of personal and family management. Creative problem solving utilizing material and personal resources for attainment of individual and group goals.

375. Home Planning and Furnishing.
Prerequisite: Housing, Furnishings, and Home Management 210 or consent of instructor.
A basic course in furnishing the home for contemporary living. Students have opportunity to apply design principles in planning furnishings for homes.

377. Practical Home Furnishings. Five double laboratory periods.
Prerequisite: Housing, Furnishings, and Home Management 210.
A course dealing with the refinishing of furniture and construction of furnishings for the home; a study of woods and wood finishes used for furniture; upholstery techniques; making curtains, draperies, and slipcovers.

378. Interior Perspective and Media. Five double laboratory periods per week.
Prerequisite: Housing, Furnishings, and Home Management 375.
Interior Perspective and Media: The development of methods for design communication through manipulation of two and three dimensional drawings in any media.

386. Introductory Housing. Three lectures and two double laboratory periods.
Prerequisite: Housing, Furnishings, and Home Management 210, or consent of instructor.
Present-day family housing needs from the standpoint of health, safety, environment, finance, ownership; types of dwellings; minimum standards.

391. Housing, Furnishings and Home Management Intership. 5–15 hours.
Prerequisite: Basic courses in the student's major and senior standing. Permission of the Department.
Supervised work experience in Housing, Furnishings; Consumer Economics or Family Management.

397. (CLT) Creative Materials and Activities in the Home.
Functions of creative materials and activities in the home in developing a closer family unity; types of creative activities which can be carried on in the average home.

464. Family Social and Economic Systems.
Prerequisite: Economics 105 or 106 and Sociology 105 or one senior division course in related field.
Systems analysis of research on the family as an income producing and income utilizing unit; application of sociological theory and research to economics of the household; implications on family structural characteristics on the family as supplier and demander of inputs and outputs in

relation to economic systems, and feedback consequences for families.

465. Family Consumer Systems.
Prerequisite: Economics 105 and Sociology 105.
Social systems analysis of research on consumer activities of households, families, and individuals; examination of empirical research and theory on the consumer at micro and macro levels; suggested new directions for consumer research and theory with family focus.

471AB. Guided United States Study Tours in Housing and Furnishings. 5 hours each.
Prerequisite: Two 400 level courses in housing or furnishings or consent of instructor.
A systematic study of residential architecture, interiors, and furnishings as found in restored and reconstructed areas of the United States. Museums which feature decorative accessories and furniture, design studios, show rooms and/or manufacturing plants will be visited. A maximum of 10 quarter hours credit earned in tour experience may be applied to any one degree. Offered summer quarter.

472AB. Foreign Study Tour in Housing and Furnishings. 5 hours each.
Prerequisite: Housing, Furnishings, and Home Management 475 or equivalent, or consent of instructor.
An on-site study of historical and contemporary residential architecture and interiors and appropriate manufacturing and design centers in selected areas outside the United States. A maximum of 10 quarter hours credit earned in tour experiences may be applied to any one degree. Offered summer quarter.

475. Historic Homes and Furnishings. Three lectures and two double laboratory periods.
Prerequisite: Housing, Furnishings, and Home Management 375 and two senior division courses, or consent of instructor.
A study of decoration and furnishings in the past and present with applications to contemporary interiors.

476. Decorative Accessories for the Home.
Prerequisite: Housing, Furnishings, and Home Management 475 or consent of instructor.
Historical and cultural development of accessories used in the home including ceramics, metals, and textiles. Design and characteristics of materials in these accessories will be covered.

477. Contemporary Home Furnishings.
Prerequisite: Two senior division courses in housing, home furnishings, or interior design; or consent of instructor.
Contemporary developments in furniture and accessories for the home; designs and materials used in contemporary homes.

478. Fabrics for Furnishings and Interiors.
Prerequisite: Housing, Furnishings, and Home Management 475 or 477 and Clothing and Textiles 360 or consent of instructor.
Development of design, construction, fibers and finishes for fabrics with emphasis on quality and utilization of current materials for upholstery, soft floor coverings, window treatments, bed, bath, and table linens.

480. Housing Developments.
Prerequisite: Housing, Furnishings, and Home Management 386 and 5 hours each of sociology and economics or consent of instructor.
Development of modern housing as related to family welfare; to health, safety, delinquency, social progress. A survey of housing problems; development of legislation; policies and programs; social and economic trends.

487. Housing Design Principles.
Prerequisite: Housing, Furnishings, and Home Management 375 and Housing, Furnishings, and Home Management 386.
A course in the principles of house design and construction including drafting, residential construction and design, and professional relationships with architects and interior designers.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

500. Consumer Legislation.
Prerequisite: Two upper division courses in related areas.
The rights and responsibilities of consumers related to legislation concerning consumer information, product safety, choice of goods and channels of appeal for the consumer.

546. Household Equipment Testing.
Prerequisite: Physics 127, and Housing, Furnishings, and Home Management 343.
The operation, care, and installation requirements of equipment; the measurement and testing of factors governing the efficiency of different types of equipment.

547. Residential Lighting.
Prerequisite: Housing, Furnishings, and Home Management 210 or 375 or consent of instructor.
Residential application of lighting. Lighting

principles and procedures and their application to various residential situations. New developments in lighting fixtures and lighting design.

564. Family Financial Counseling.
Prerequisite: Housing, Furnishings, and Home Management 364.
Case study and practicum experiences related to financial counseling for families.

568. Management for Disadvantaged Families.
Prerequisite: Housing, Furnishings, and Home Management 368 or Housing, Furnishings, and Home Management 868.
Study of the life styles and instrumental functioning of families handicapped by limited cultural, mental, economic and physical resources. Unique managerial needs of disadvantaged families will be explored.

570. Consumer and the Market.
Prerequisite: Economics 105.
Problems of the household buyer; intelligent selection of goods on modern market; standards and labeling as safeguards in buying; family income and problems of distribution.

571. Furnishings and Interiors for Low Income Housing. Two 1-hour and three 2-hour laboratory periods per week.
Prerequisite: Housing, Furnishings, and Home Management 364, 377, one 400 or 500 level furnishings course, and 10 hours of social science or consent of instructor.
Planning furnishings for various levels of family income with emphasis on low income families. Study of available space in floor plans and the selection of materials, construction, design, durability, and cost of furnishings for the available space, using limited economic resources. Designed for majors in furnishings and interiors, housing, home economics education and business home economists.

572. Furnishings Manufacturing and Retailing Industries.
Prerequisite: One 400 level course in furnishings and interiors (not fabrics).
The design, construction and cost of current furnishings related to manufacturing and retailing processes. Field trips to representative manufacturing plants, retail stores, the Atlanta Merchandise Mart and plants in High Point, North Carolina.

575. Methods and Techniques of Furnishings and Interior Display. Two 1-hour lectures and three 2-hour laboratory periods per week.
Prerequisite: Housing, Furnishings, and Home Management 475, 477, or consent of instructor.
Planning, executing and evaluating illustrative materials and techniques in furnishings for promotional or informational purposes. Individual and group work on two and three dimensional displays. Designed for majors in furnishings and interiors, housing, home economics education and business home economists.

576. Family Finance.
Prerequisite: Housing, Furnishings, and Home Management 364 or equivalent.
Personal and family financial planning. Family values in relation to family income, spending, saving, and investing; effect of the economy on family financial planning; retirement plans and social security; insurance; home ownership and housing.

THE HENRY W. GRADY SCHOOL OF JOURNALISM AND MASS COMMUNICATION

Head: Cutlip. *Staff*: Abney, Agee, Anservitz, Bartlett, Baxter, Bethune, Clark, Crow, Dominick, Eberhard, English, Fletcher, Fohey, Foote, Griese, Hester, Hynds, Johnston, Kitchens, Kopp, Kosak, Kraps, Lane, Lewis, Lubs, Lynch, Martin, Martin, McDougald, McKenzie, Moore, O'Brien, Quarles, Russell, Stone, Surlin, Wise, Wurtzel, Vogel.

101. Mass Communications I: Survey.
A survey of the structure and function of contemporary mass media from an historical and descriptive perspective, with some attention paid to problems and criticisms of the media.

203. Mass Communications II: Philosophy.
Prerequisite: Journalism 101.
An introduction to the theory and philosophy of mass communications in the United States, emphasizing the evolving philosophy of the United States press system, and tracing the development of freedom of speech and the press in the Western world; world and United States press systems; processes and effects of mass communications and mass media.

204. Mass Communications III: Writing Workshop. Two lectures and two double laboratory periods.
Prerequisite: Journalism 101.
A general course in writing for the mass media emphasizing perception and the accurate reporting of sensory data, with additional experiments and practice in non-verbal communication; utilization of slides, audio tapes, video tapes, and films for in-class presentations.

260. News Writing and Reporting. Two lectures and two double laboratory periods.
Prerequisite: Journalism 101 and 203.
A study of basic reporting, writing, and editing practices with practical assignments in the various media.

280. Photo Communications I: Basic Photography. Two lectures and two double laboratory periods.
This course introduces the student to modern theories and practices of photography. Included are instructions in the operation of adjustable cameras; lighting techniques; characteristics of photographic film and paper; use of exposure meters, filters and other accessories; basic darkroom techniques, including film processing, printing, enlarging and photofinishing.

300. Mass Communications Internship.
Prerequisite: Completion of sequence core requirements or permission of sequence chairman.
Supervised experience in mass communications.

301. American Telecommunication System.
This broad survey introduces the student to the structure of mass telecommunication in the world with emphasis on the systems in the United States, the regulatory features of the systems, the impact of technology, the economic dynamics, and the range of career possibilities of the systems (including radio, television, recordings, cable).

302. Analysis of Telecommunication Messages.
Prerequisite: Journalism 301 or permission of instructor.
The focus of this course is the structure and implications of the various program elements found in American telecommunication systems. Each of the major program types for broadcasting, film and recordings as well as important

production styles will be studied. The student will draw upon social and behavioral scientific studies as well as from critical models for his program analytic framework. The interaction of production economics and regulatory policies with the content of popular culture will be introduced.

303. Telecommunication Audiences.
A study of the impact of telecommunication programming on the audience and the impact of the audience on programming. Introduction to basic audience research techniques such as ratings, image and acceptance profiling as well as focusing on the role of special interest groups and minorities in shaping programming decisions. Student participation in both laboratory and field research may be required.

351. Editing and Makeup. Two lectures and two double laboratory periods.
Prerequisite: Journalism 101, 203 and 260.
A practical course in the selection and preparation of written and pictorial materials for newspapers, magazines, and related media.

352. Graphic Communications. One lecture and two double laboratory periods.
Prerequisite: Journalism 101 and 203 or permission of instructor.
A study of printing processes, typography, photoengraving, layout and design, production planning, and related topics.

377. Photo Communications II: Photojournalism. Three lectures and two double laboratory periods.
Prerequisite: Journalism 260 and 280.
An advanced course in the taking, processing, editing and use of photography for news, feature, and advertising copy for newspapers, magazines, related media, and public relations, with emphasis on the use of photographs in the presentation of news.

381. Radio-Television News. Two lectures and two double laboratory periods.
Prerequisite: Journalism 260 and 512 or permission of instructor.
Techniques of gathering, writing, and broadcasting news on radio and television. Actual reportorial assignments, studio production of both radio and television newscasts, utilization of wire copy, photographs, taped inserts, newsfilm. Use of the tape recorder and the 16mm camera in news operations.

401. History of Program Ideas.
Prerequisite: Journalism 302 or permission of instructor.
The process by which entertainment and informational communication have developed in telecommunication systems. Viewing and listening of early programs, study of stage, cinema and folklore productions of the past as well as principal theories of program function will be studied.

402. Telecommunication Production Variables.
Prerequisite: Journalism 301 and 302.
The role of motion, composition, thematic variation, synthesis, plot and character in communicating meaning in telecommunication programs. Students will view and analyze typical works and will participate in laboratory and field studies.

403. Public Telecommunication Utilization.
Prerequisite: Journalism 303.
Procedures in evaluating public telecommunication programming including its relationship with the users of public telecommunication. Course will involve social and behavioral scientific findings as to the effectiveness of media in a variety of educational and instructional settings.

404. Educational Telecommunication Program Development.
Prerequisite: Journalism 303.
The practice and philosophy of developing educational programming for in-school, adult education and enrichment aims within publicly supported stations and networks.

405. Operations Management in Telecommunication.
Prerequisite: Journalism 303.
Theory and application of management practices in the administration of telecommunication businesses. Cost and revenue management, use of research, rate setting, capital and operations budgeting, personnel management and program syndication.

430. History of the Mass Media in the United States.
Prerequisite: Journalism 101 and 203 or permission of instructor.
A survey of the mass media in the United States from colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

440. Public Opinion Reporting. Two lectures and two double laboratory periods.
Prerequisite: Journalism 260 and 351 or permission of instructor.
An examination of public opinion, its nature and study techniques; propaganda, and media interaction with society, with emphasis upon the measurement of public opinion, and interpretation of data. Students will prepare reports of

findings for publication in print and broadcast media.

454. Law of Communication.
A broad application of principles of law to the mass communication media, media practice, advertising, and freedom of information, including libel, contempt of court, right of privacy, copyright, and postal laws.

456. Contemporary American Magazines.
Prerequisite: Journalism 101 and 203 or permission of instructor.
A survey of contemporary American magazines and their role in society. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography and technology.

460. Public Affairs Reporting.
Prerequisite: Journalism 260 and 351.
An advanced course in analyzing, interpreting, and reporting governmental affairs at local, state, and national levels. Students cover assignments for student and professional media.

461. Advanced Radio-Television News. Two lectures and two double laboratory periods.
Prerequisite: Journalism 381.
Advanced methodology in gathering ad producing news for radio-television. Students will use sound film cameras and audio recording equipment. Analysis of news sources and problem areas unique to the broadcast journalist is emphasized.

496H, 497H, 498H. Independent Reading and/or Projects. 5 hours each.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director who must be an assistant professor or higher.

499H. Honors Thesis.
This course provides opportunity for an Honors student to undertake individual research in the field of his major or in a closely related field.

511. Writing for Telecommunication.
Prerequisite: Journalism 303.
A study of the problems of writing for the telecommunication industry. Introduction to special scripting requirements of radio, television, film, recording and cable formats. Emphasis will be upon working from the creation of the idea to final script.

512. Basic Telecommunication Production.
Prerequisite: Journalism 303 or permission of instructor.
Basic theory and practice studio operations in radio, television, film, recording and cable—with laboratory experience in the use of control boards, records, cameras, switching and editing equipment, microphones and related equipment. An understanding of the problems of production, design, direction and performance.

513. Telecommunication Regulation.
A survey of regulatory agencies concerned with telecommunication (radio, television, cable), important regulatory principles from law, regulatory practice and common law. Emphasis will be upon the regulatory issues faced by the professional in telecommunication, including the development and use of self-regulatory codes.

520. (SPC) Communication Theory.
Prerequisite: Speech 108 or 256 or equivalent, or Journalism 101 and 203.
This course familiarizes the student with the fundamental nature of and problems in interpersonal and group communication. Communication is studied from the scientific perspective with emphasis on factors that measurably affect quality of communication. Students analyze communication situations of their own choice. Also offered as Speech 520.

521. (SPC) Social Effects of Mass Communication.
Prerequisite: Journalism 101 and 203 or two senior level courses in Psychology, Sociology, or Speech Communication.
The interaction between mass communication and the social institutions of our society, its effects, uses and potential—will be critiqued and analyzed, specifically delving into mass media's effect on children, attitudes and values, minority groups, and social behavior. Current research literature in the field will be analyzed and methods of improving the system will be discussed.

522. (SPC) Mass Communication and Persuasion.
Prerequisite: Journalism 101 and 203 or two senior level courses in Psychology, Sociology, or Speech Communication.
An examination of approaches utilized to investigate mass communication as a persuasive process. The history of theoretical and empirical development in this area as well as recent developments are studied with particular focus on attitude change through communication, the nature of communication in relation to institutionalized communications media; and the effects of persuasive communication on attitudes and opinions. Also offered as Speech 522.

523. Mass Communications Research.
Prerequisite: Permission of instructor.
Introduction to experimental and survey design

for research in the field of mass communications. A survey of methodology in conjunctional with mass communications research case studies, problems and class research projects.

543. Production of Informational Programming.
Prerequisite: Journalism 511 and 512.
Theory and application of visual/aural telecommunication principles to informational messages. Student productions will be prepared, critiqued and tested.

544. Television Acting and Performing. Five double period lectures.
Prerequisite: Two senior division courses in speech, drama, or radio-television.
The theory and practice of television acting with primary emphasis on dramatic material as it relates to professional television.

545. Advanced Television Directing. Five double period lectures.
Prerequisite: Journalism 543 or permission of instructor.
An advanced study of television directing with special emphasis on dramatic material, video tape editing, and color special effects.

546. Advanced Projects in Radio-Television-Film.
Prerequisite: Permission of instructor.
An independent projects course in radio, television, and film media. Students may do projects in one or more media.

553. Editorial and Issues.
Prerequisite: Journalism 260 and 351.
A study of editorial policies, ethics, influence, and techniques. Students analyze, discuss, and write editorials about local, state, and national issues.

557. Principles of Advertising.
A course providing a broad understanding o advertising—how it fits into the economy, how it works, and how it is created.

558. Magazine Article Writing.
Prerequisite: Journalism 260 and 351 or permission of instructor.
A practical course in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

559. Critical Writing and Reviewing.
Prerequisite: Journalism 260 and 351.
A course in criticizing and reviewing books, plays, televsion, films, and other arts for newspapers, magazines, and related media.

560. Investigative Reporting.
Prerequisite: Journalism 460.
Practice in and study of investigative, interpretative and in-depth reporting for the mass media. Students will develop reporting projects in the field of public affairs in keeping with their interests and background.

564. Newspaper Management.
Prerequisite: Journalism 101.
A study of the business and editorial management of daily and weekly newspapers, including circulation, advertising, and promotion.

566. Journalism in the Secondary School.
Prerequisite: Journalism 101 and 203 or permission of instructor.
A survey of news gathering, news writing, copy reading, typography, and business management, with specific relation to the high school newspaper, also school public relations.

567. Contemporary American Newspapers.
Prerequisite: Journalism 101 and 203 or permission of instructor.
A study of the newspaper and its role in America today. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology. Leading papers in various sections are examined closely.

570. Advanced Projects in Magazines.
Prerequisite: Journalism 558.
An independent projects course in magazines. Most projects are concerned with the writing of magazine articles, particularly series of articles. Students may select projects related to other phases of magazine production.

574. Advertising Campaigns.
Prerequisite: Journalism 557, 575, and 576, or permission of instructor.
Planning, preparing, and presenting research, copy, and layout for a national advertising campaign. Class groups function as an advertising agency. Emphasis on media, copy and marketing research.

575. Advertising Copy Writing.
Prerequisite: Journalism 557 or Marketing 360.
Principles and practices in the preparation of copy for a variety of media. Reader surveys, copy tests, and a study of products in relationship to copy and markets are a part of this course.

576. Advertising Media.
Prerequisite: Journalism 557.
A study and evaluation of the principal advertising media, including newspapers, magazines, trade publications, radio, television, outdoor, novelty, and cinema. The work of an advertising agency or office and the selling of space or time are considered.

577. Public Relations.
Prerequisite: Journalism 101 and 103 or permission of instructor.
A study of principles and techniques. Research in interpersonal and mass communications with emphasis on effectiveness and studies among various publics.

578. Retail Advertising.
Prerequisite: Grade of B or better in Journalism 575 and permission of instructor.
A continuation of Journalism 575 with greater emphasis on creative writing and designing of advertising for national media. Each student will write his own rationales and prepare copy platforms.

579. Advanced Advertising Copy.
Prerequisite: Grade of B or better in Journalism 575 and permission of instructor.
A continuation of Journalism 575 with greater emphasis on creative writing and designing of advertising for national media. Each student will write his own rationales and prepare copy platforms.

583. Aural Elements in Telecommuniation Production.
Prerequisite: Journalism 512.
Theory and application of sound recording in message preparation. Acoustics, microphone selection and placement, editing, and mixing in both studio and field settings will be subjects of discussion and laboratory sessions.

584. Radio-Television Advertising. Two double period lectures.
Prerequisite: Journalism 512 or 575, or permission of instructor.
An intensive study of the role of advertising in broadcasting. Copy preparation and studio production of both radio and television commercials. Examination of commercials to illustrate basic concepts and techniques.

586. Cinematographics Techniques.
Prerequisite: Journalism 280, 511, and 512.
Production for telecommunication using film and other portable production equipment. Students will participate in laboratory and field work.

590. Business and Industrial Publications.
Prerequisite: Journalism 352 or permission of instructor.
Study of the purpose, content, appearance, writing, and editing of various types of company, business, and association publications, including internal and external house publications.

591. Public Relations Administration.
Prerequisite: Journalism 577.
A study of the operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision-making and policy formulation to the communication process.

592. Public Relations Communications.
Prerequisite: Journalism 260, 352, and 577.
Use of audio, visual, and written tools and techniques with emphasis on public relations writing and editing. Attention is given to objectives, content, style, graphic presentation, and effectiveness, in information dissemination to internal and external publics. Consideration is given to selection and utilization of communications media with emphasis on interpretation of the business, industrial, institutional, and associational story.

595. Public Relations Campaigns.
Prerequisite: Journalism 577 and two of the following: Journalism 410, 591, or 592.
Research, planning, and preparation of an integrated public relations campaign. Campaigns will alternate among business, governmental, institutional, and organizational problems.

596. Advanced Cinematographic Techniques.
Prequisite: Journalism 586.
Advanced theory and application of techniques of studio and second unit production of complicated entertainment and informational programming on film. Students will produce messages using advanced cinematographic techniques.

598. Industrial Advertising.
Prerequisite: Journalism 557 or permission of instructor.
A study of the role, responsibilities, principles, and techniques of business and industrial advertising. (Not open to business administration majors.)

599. Seminar in Telecommunication.
A senior level seminar designed to synthesize and integrate many of the theoretical and practical approaches to the study of radio, television, and film with an aim toward analyzing the process and effects of mass communication on the individual, the media industries, and the society.

SCHOOL OF SOCIAL WORK

SOCIAL WORK (SW)

215. (SOS) Field of Social Work.
A study of settings, values and approaches of social work within the field of social welfare.

220. (SOS) Social Welfare as a Social Institution.
This is the first course in the social work welfare policy and services area. It is designed to provide students with a basic framework for understanding the major historical problems and issues in social welfare provision within the context of the economic, political and social systems of the United States. The primary thrust will be focused on the development of social welfare as it has evolved within the evolution of the American capitalistic, marketing, economy and the American social and political systems.

352. (SOS) Interventive Methods of Social Work Practice.

391ABCD. (SOS) Seminar in Social Work Practice. 5 hours each.
Knowledge and skill in integrated social work practice with practicum.

420. Social Policy and Services in Selected Social Welfare. 1–5 hours.

432. Research Methods in Social Work.
Social work research and research in its broadest sense can be conceptualized according to three related aspects: (1) the research attitude, (2) the research process, and (3) the research methodology. These three conceptions of research form the orientation from which this course has been developed. The primary focus is on the development of certain ideas and concepts important to an understanding of the research process, together with a consideration of those methodological techniques involved in applying the research process to specific problems.

441. Bases of Social Functioning.
Interrelationship of biological, psychological, social, and economic factors in maintaining the individual's social functioning at various developmental periods.

470. (SOC) Social Welfare: Structures and Policies.
An examination of the institutional development of social welfare services. Reference is made to current developments and issues.

500. Senior Seminar.
This course is designed to be a culmination of the BSW curriculum. The prerequisites for this course: SW 215, SW 220, SW 352, and SW 391A. SW 500 should be taken in the last quarter of the student's senior year.
The purpose of the course is to provide the student with a synthesizing and integrative professional seminar. It is a systematic effort to "socialize" the student into the profession. It is a seminar where the student assimilates his or her role as a baccalaureate degree social worker within the profession.

540. Introduction to Social Casework. 1–5 hours.
Casework as a method of social work practice. Basic elements in establishing and maintaining the professional relationship. Impact upon family functioning. Influence of agency setting. (Designed primarily for pre-professional students or those pursuing a degree in a field other than social work.)

541. Introduction to Social Work Methods I. 1–5 hours.
Current developments in the application of various social work methods to types of problems encountered in social work practice.

550. Principles of Social Group Work. 1–5 hours.

560. Principles of Community Organization. 1–5 hours.

570. Principles of Social Work Administration. 1–5 hours.

580. Law and Social Work.

DIVISION OF THE ARMED SERVICES

AIR FORCE ROTC COURSES (AIR)

The General Military Course is normally completed during the freshman and sophomore years. It consists of six quarters of study with one hour of classroom work and one hour of leadership laboratory per week.

The Professional Officer Course consists of six quarters of study and leads to a commission in the United States Air Force. Leadership and management skills as they apply to a junior officer in the Air Force are emphasized. Three classroom hours and one hour in leadership laboratory are required weekly. Students interested in this program leading to a commission should contact the Professor of Aerospace Studies.

Head: Holcombe. *Staff*: Berenguer, Edwards, Weber.

General Military Course

101. United States Air Force and Strategic Offensive Forces. 2 hours.
Introduction to the U. S. Air Force including doctrine, mission, and organization. Study of strategic offensive forces including employment and effects of nuclear weapons, and Strategic Air Command.

102. Strategic Defensive Forces and Introduction to General Purpose Forces. 2 hours.
Prerequisite: AIR 101 or permission of instructor.
Study of aerospace defense forces including manned aircraft and missile defense forces. Introduction to Army, Navy, and Marine general purpose forces.

103. General Purpose Forces and Aerospace Support Forces. 2 hours.
Prerequisite: AIR 101, 102 or permission of instructor.
Study of tactical air forces and operations, counterinsurgency and special operations, and aerospace support forces.

201. Defense Organization. 2 hours.
Prerequisite: AIR 101, 102, 103 or permission of instructor.
A study of the organization and functions of the Department of Defense and role of the military in U. S. national policies.

202. Defense Policies. 2 hours.
Prerequisite: AIR 201 or permission of instructor.
Theories of general war. Natural and context of limited war. Soviet and Chinese military policies and strategies.

203. International Security Alliances. 2 hours.
Prerequisite: AIR 201, 202 or permission of instructor.
Role of alliances in U.S. defense policies. The elements and processes in the making of defense policy.

Professional Officer Course (Advanced)

Enrollment in the Professional Office Course requires completion of all AIR 100 and AIR 200 courses or approved substitutes. Cadets must be mentally and physically qualified and have approval of the Professor of Aerospace Studies.

301. Growth of U.S. Aerospace Power. 3 hours.
A detailed study of the nature of war with emphasis on the Air Force role. Mission and organization of the Department of Defense; development of the air power of the United States; the Air Force mission, concepts, doctrine, and employments.

302. Contemporary Aerospace Power. 3 hours.
Examination of aerospace power in the 1960's with emphasis on those strategy and policy concepts which are important to the present time; counterinsurgency operations in Southeast Asia; new aircraft programmed for the future.

303. Astronautics and Space Operations. 3 hours.
Examination of national space effort and its evolution; characteristics of the spatial environment; types of orbits and trajectories; current space operations.

401. Air Force Leadership. 3 hours.
Prerequisite: AIR 301, 302, 303, or approval of the PAS.
A study of the need for Air Force leadership, human relations, discipline in the military services, and the military justice system.

402. Command-Staff Relationships. 3 hours.
A study of the variables affecting Air Force leadership, problem-solving, and the authority and relationship of the commander and his staff. Introduction to Air Force management.

403. Air Force Management and the Junior Officer. 3 hours.
A study of the functions of management, Air Force personnel policies, and the information sciences. Briefing and preparation for commissioned service.

ARMY ROTC COURSES (MIL)

The basic course of six quarters duration consists of one hour of classroom work and one hour of leadership laboratory per week. In the classroom, the student acquires the basic knowledge of military organization, weapons, skills, history and customs. On the drill field, he develops his potential for leadership.

The Advanced Course consists of four hours of military science coursework per week for two quarters in the junior year and two quarters in the senior year. During spring quarter, only one hour of classwork is required in the junior year. In the classroom, the student studies military management and leadership, and fundamentals and dynamics of the military team. Applied leadership is emphasized on the drill field. One quarter of the junior year must include HIS 457B, World Military History, offered by the history department of the College of Arts and Sciences. One quarter of the senior year must include an elective approved by the Military Science Department.

Head: McCrary. *Staff*: Abney, Hurd, Plumley, Poucher.

Basic Course

101. Army Organization. 2 hours. One lecture, one laboratory period.
A study of the U. S. Army and the ROTC Organization.

102. Basic Weapons and Military Skills. 2 hours, one lecture, one laboratory period.
A study of characteristics of basic military weapons, the principles and fundamentals of rifle marksmanship, the elements of first aid, and the employment of individual camouflage, cover, concealment, and field fortifications.

104. Basic Military Skills. 2 hours, one lecture, one laboratory period.
A study of the basic military skills essential for the contemporary soldier with emphasis on individual training in first aid, intelligence information, and field preparedness.

201. Map Reading. 2 hours. One lecture, one laboratory period.
A study of basic map reading as applied by the small unit leader.

202. Basic Tactics and Operations. 2 hours. One lecture, one laboratory period.
A study of small unit tactics, operations and troop leading procedures to include the combined arms team.

204. Military Communications. 2 hours. One lecture, one laboratory period.
A study of military communications procedures to include terminology, security, electronic warfare, and preparation of military correspondence.

Advanced Course

301. Leadership and Management I. 3 hours. Four lectures, one laboratory period.
Prerequisite: Basic Course.
A study of the psychology of leadership and methods of instruction to include practical application.

302. Fundamentals and Dynamics of the Military Team I. 3 hours. Four lectures, one laboratory period.
Prerequisite: Basic Course.
A study of tactics applied at the platoon and company levels to include battlefield communications.

303. Leadership Seminar. 2 hours. One lecture, one laboratory period.
Prerequisite: MIL 301 and 302.
A series of seminars and laboratories to prepare cadets for Advanced Summer Camp.

401. Fundamentals and Dynamics of the Military Team II. 3 hours. Four lectures, one laboratory period.
Prerequisite: MIL 301, 302.
A study of command and staff duties and responsibilities of the professional officer to include operations, intelligence, administration and logistics.

402. Leadership and Management II. 3 hours. Four lectures, one laboratory period.
Prerequisite: MIL 301, 302.
A study of special tactical operations, the military justice system, and a service orientation.

APPENDIX A

DEPARTMENTAL PREFIX ABBREVIATIONS

Accounting	ACC
Administration and Supervision Education	EAS
Adult Education	EAD
Agricultural Economics	AEC
Agricultural Education	EAG
Agricultural Engineering	AEN
Agricultural Extension	AET
Agricultural Mechanization Technology	AMT
Agriculture	AGR
Agronomy	AGY
Air Force ROTC—Aerospace Studies	AIR
Animal Nutrition	AN
Animal Science	AS
Anthropology	ANT
Aramaic/Syriac	ARA
Army ROTC—Military Science	MIL
Art	ART
Art Education	EAR
Art Literature	ARL
Arts and Sciences Experimental	ASE
Astronomy	AST
Avian Medicine	AM
Banking and Finance	FIN
Biochemistry	BCH
Biology	BIO
Botany	BOT
Business Education	EBE
Catalan	CAT
Chemistry	CHM
Child and Family Development	CFD
Classics	CLC
Clothing and Textiles	CLT
Comparative Literature	CML
Counselor Education and Personnel Services	ECP
Curriculum and Supervision	ECS
Dairy Science	DS
Dance Education	DED
Distributive Education	EDE
Drama	DRA
Early Childhood Education	ECE
Economics	ECN
Education	EDU
Educational Media	EAV
Educational Philosophy and Measurement	EPH
Educational Psychology	EPY
Educational Research	ERS
Elementary Education	EEL
Engineering Technology	ET
English	ENG
English Education	EEN
Entomology	ENT
Environmental Design	ENV or LAR
Environmental Health Science	EHS
Exceptional Children Education	EXC
Fine Arts	FA
Foods and Nutrition	FDN
Food Science	FS
Foreign Language Education	EFL
Forest Resources	FRS
Foundations of Education	EFN
French	FR
Geography	GGY
Geology	GLY
German	GER
German Translation	GET
Gerontology	GNT
Graduate School Experimental	GSE
Greek	GRK
Health Education	HED
Health Occupations Education	EHO
Hebrew	HBW
Higher Education	EHI
History	HIS
Home Economics Education	EHE
Horticulture	HOR
Housing, Furnishings, and Home Management	HFM
Industrial Arts Education	EIA
Italian	ITA
Japanese	JAP
Journalism and Mass Communication	JRL
Landscape Architecture	LAR or ENV

Language and Literature	LLT
Large Animal Medicine and Surgery	LMS
Latin	LAT
Law	LAW
Library Education	ELE
Linguistics	LIN
Management	MAN
Management Sciences	MS
Marketing	MKT
Mathematics	MAT
Mathematics Education	EMT
Medical Microbiology	MMB
Microbiology	MIB
Music	MUS
Music Education	EMU
Netherlandic	NET
Norwegian	NOR
Parasitology	PAR
Park and Recreation Administration	REC
Pharmacy	PHR
Philosophy	PHY
Physical Education	PED
Physical Sciences	PSC
Physics	PCS
Plant Genetics	GEN
Plant Pathology	PAT
Political Science	POL
Portuguese	POR
Poultry Science	PS
Provencal	PRO
Psychology	PSY
Reading Education	ERD
Real Estate and Urban Development	RE
Recreation	REC
Religion	REL
Risk Management, Insurance, and Management Sciences	INS
Romance Language	ROM
Russian	RUS
Safety Education	SED
Sanskrit	SKT
Science	SCI
Science Education	ESC
Small Animal Medicine and Surgery	SMS
Social Science	SOS
Social Science Education	ESS
Social Work	SW
Social Work Education	ESW
Sociology	SOC
Spanish	SP
Special Studies English	SSE
Special Studies Math	SSM
Special Studies Reading	SSR
Speech Communication	SPC
Speech Education	ESP
Speech Pathology and Audiology	SPA
Statistics and Computer Science	STA
Student Teaching Education	EST
Swedish	SWE
Trade and Industrial Education	ETI
Veterinary Anatomy and Radiology	VAH
Veterinary Medicine	VET
Veterinary Pathology	VPP
Veterinary Physiology and Pharmacology	VPH
Vocational Education	EVO
Zoology	ZOO

APPENDIX B

SCHOLARSHIPS, FELLOWSHIPS, LOANS AND AWARDS

NOTE: This listing of scholarships, fellowships, loans and awards is the most complete listing possible at the time of publication. However, this listing is not comprehensive, and other funds may exist which have been overlooked. Students interested in financial aid should contact the Office of Financial Aid, their dean or department head for information on funds that may not have been included here.

Awards marked by an asterisk (*) do not require separate, individual applications; completing the general University application for financial aid automatically places every student in consideration for these awards. Inquiries and applications for those not marked with an asterisk (*) should be directed to the respective dean, director, or activity coordinator.

University-wide

Alpha Gamma Rho Scholarship
A $200 award made to male freshmen students in agriculture, forest resources, veterinary medicine, agricultural engineering, or agricultural education, given to the 4-H male student ranking highest in scholarship from candidates nominated annually by each state 4-H club leader.

***Athens Businessmen's Scholarships**
Several tuition scholarships for Athens, Clarke County and vicinity freshmen, made possible by Athens Federal Savings & Loan Association fund, Fred Bishop Memorial, Dick Ferguson fund, Harry Loef fund, Normal Hardware fund, Robert E. Poss and Malcolm Cornelison Memorial.

Atlanta Pan-Hellenic Scholarship
Tuition to senior woman student (not necessarily a sorority member), based on scholarship, need and character.

Charles Hillyer Brand Memorial
Established by Mr. Brand, this fund supports loans to students who are residents of the Western Judicial Circuit of Georgia.

***Charles McDonald Brown Loan Fund**
Established by Joseph E. Brown, former governor of Georgia, in memory of his son, this fund supports loans to male students who are residents of Georgia.

***Henry Warren Brown Memorial**
Established by the family of Henry Warren Brown, this fund supports student loans.

***B. F. Bullard Loan Fund**
Established by Mrs. Elizabeth M. Bullard, this fund supports loans to deserving male students.

Cherokee Scholarship
Established by the Northeast Georgia District, Boy Scouts of America, this fund supports tuition scholarships for former Boy Scouts.

Chi Omega Award
Established by the Mu Beta Chapter of Chi Omega sorority, this fund supports a $25 prize to the outstanding woman student in sociology, economics, psychology and political science in rotating order; eligibility based on student taking at least three courses per quarter throughout the year.

Chi Psi Award
Established by the national Chi Psi Fraternity, this fund supports an annual $200 award to the outstanding member of the local Chi Psi Fraternity.

***F. Churchill Memorial**
Established by Mrs. Lois Churchill and Miss Lotta M. Churchill in memory of Aaron Flint Churchill, this fund supports loans or scholarships to deserving students.

Citizens and Southern National Bank Educational Fund
Established by the C&S National Bank Loan Fund, this fund supports loans or scholarships to deserving students or provides matching funds for federal or state loan programs.

***Coats & Clark Scholarship**
Established by Coats & Clark, Inc., this fund supports an annual $500 scholarship to an entering freshman, with first priority given to an employee or the son or daughter of an employee and second priority given to a resident of a community in which the company operates a plant.

Edward T. Comer Fund
Established by Mr. Comer, this fund supports loan funds to deserving students with preference given to those from rural sections and scholarships for advanced graduate students in the field of business administration.

Hugh Moss Comer Scholarship
Established in memory of Mr. Comer by Mrs. Mary Comer Love, this fund supports an annual $400 scholarship to an outstanding 4-H club member attending the University.

***Communications Workers of America Scholarship**
An award of $500 for a junior student who is enrolled in the College of Arts & Sciences, the College of Business Administration or the School of Journalism, based on scholarship and need.

Continental Can Company, Inc., Scholarship
Established by the Savannah and Augusta companies, this fund supports annual $1000 scholarships to incoming freshmen, recipients to come from the wood producing areas of those companies, based on scholarship, leadership and personality.

Delta Delta Delta Scholarship
Established by the local chapter and the national organization, this fund supports awards to a junior and a senior woman to continue their studies.

Delta Phi Epsilon "Outstanding Freshman" Award
An annual $100 award and a trophy to the male or female student judged the year's outstanding freshman by the UGA Chapter of Delta Phi Epsilon.

William Stark Denmark Memorial
Established in memory of Mr. Denmark by his father, this fund supports loans to deserving male students with preference given to students from Brooks, Chatham, Bulloch and Clarke counties.

***Eugene and Harry Dodd Loan Fund**
Established by Messrs. Dodd, this fund supports loans to male students who are 18 years of age or older and state residents.

The Felton Fund
Established by the will of Rebecca Latimer Felton in memory of her children, this fund supports awards to support the education of male students; administered by the First National Bank of Atlanta.

***George Rush Franklin Scholarship**
Established by Desiree L. Franklin, this fund is used for scholarships to deserving male students, with preference given to those from the Augusta area.

John and Mary Franklin Scholarships
Twenty $300 scholarships for 4-H club members or former members who are entering freshmen, transfer students or those presently enrolled in the University; recipients must work at Rock Eagle 4-H Camp as a counselor in the summer camping program.

***Freshmen Scholarships**
The top 50 entering women freshmen and the top 50 entering men freshmen are named Freshmen Scholars and offered $100 honorariums.

***Ebb W. Gallaher Memorial**
Established by Mrs. Lou Gallaher in memory of Mr. Gallaher, this fund supports scholarships or loans to deserving male students.

Georgia Bankers Association Scholarship
Recipients are recommended by GBA and may attend any University System of Georgia institution.

Georgia Higher Education Assistance Corporation Loan Fund
Loans are negotiated through eligible lending institution in the student's home town. Only Georgia residents are eligible and amounts of loans vary according to student's family circumstances.

***Lt. Joel Hirsch Goldberg Memorial Fund**
Established by the B'nai B'rith Women of Atlanta in memory of the son of their founding president and an alumnus of the University, this fund supports an annual state tuition award to a deserving student.

***Karl Johnson Memorial Scholarship**
Established by Mrs. Earl Crafts in memory of her brother, this fund is used for scholarships to students selected by the University scholarship committee.

Jerome Jones Memorial AFL-CIO Scholarship
Established by the Georgia AFL-CIO in memory of Mr. Jones, this fund supports scholarships to upperclass students.

***Jerry and Gail Kahn Memorial Scholarship**
Established by the Georgia Distilled Spirits Foundation, Inc., this fund supports one scholarship each year to an entering in-state freshman based on student need; renewable each year for four years.

Kappa Delta Scholarship
Established by Sigma Phi Chapter of Kappa Delta Sorority, this fund supports an annual scholarship covering state matriculation fee for an upperclass woman student.

***Clyde L. Jr., and John King Memorial**
Established by Clyde L. King, Sr., in memory of his two sons, this fund supports loans to male students attending the University.

George D. Kitzinger Annual Honorary Award
Established in the will of the late Mr. Kitzinger, this fund supports scholarships to outstanding 4-H club men and women students on the basis of character, conduct, and personal achievement in 4-H club work throughout the state.

***Joseph Rucker Lamar Fund**
Established in the will of Mrs. Clarinda P. Lamar in memory of her husband, this fund supports scholarships or loans of approximately $500 each to students from Richmond Academy, Augusta, who attend the University. Recipients are named by the trustees of Richmond Academy.

Joseph Henry Lumpkin Scholarship
Established by Mr. Lumpkin, former associate justice of the Supreme Court of Georgia, this fund supports loans to any male student attending the University.

***Richmond Walton McCurry D.A.R. Loan Fund**
Established by the Elijah Clarke and the John Houston chapters of the National Society of the D.A.R., this fund supports loans to deserving women students.

Hamilton McWhorter Prize
Established by the family of Mr. McWhorter in his memory, this fund supports the purchase of a silver goblet awarded to a member of the freshman class for general excellence in scholastic and extra-curricular activities.

Bert Michael Scholarship
Established in memory of Mr. Michael, class of 1912, by his parents and brothers, this fund supports a scholarship given to a member of the junior class who must be among the top ten students in the class, selected by a committee of the faculty.

***Thomas E. Mitchell Educational Fund**
Established by Mr. Mitchell, this fund supports loans for scholarships to deserving students who are residents of Georgia and who attend the University.

***C. A. and B. T. Moon Memorial**
Established by A. H. Moon in memory of his parents, this fund supports student loans to both men and women students who are state residents.

***Pearl Campbell Moon Memorial**
Established by A. H. Moon in memory of his wife, this fund supports loans to both men and women students who are residents of Georgia.

Phelps-Stokes Endowment
Established by Miss Carolyn Phelps Stokes, this fund supports a fellowship to a graduate student in the field of economics, education, history or sociology for his study of the American Negro. Each recipient shall prepare a thesis embodying the results of his investigations which shall be published by the University, the expense to be paid from the fund.

Phi Kappa Phi Scholarship
A $100 award to the freshman student with the highest scholastic average for the first year's work at the University who returns to school the following quarter for the sophomore year.

Stoddard-Burleigh-Sutton Scholarship
Established by Mrs. Elizabeth Ireland Poe and others interested in publishing a book about Georgia birds, this fund supports scholarships or fellowships as determined by the University's wildlife conservation committee.

***May Edwin Talmadge D.A.R. Loan Fund**
Established by the Georgia Society of the D.A.R., this fund supports loans to deserving women students.

Berryman T. Thompson Educational Fund
Established by Mrs. Berryman T. Thompson and Mrs. Lucille Thompson Jones of Newnan, this fund supports loans to students from Coweta County.

Lamar Trotti, Jr., Scholarship
Established by Lamar and Louise Trotti as a memorial to their son, this fund supports scholarships to students from Tallulah Falls School who are attending the University; reci-

pient selected by a committee composed of members of the Young Matrons Circle for Tallulah Falls School.

***Frances Clementine Tucker Fund**
Established through the generosity of Millard C. Horton, sole surviving trustee of the Frances Clementine Tucker Fund, created by her will, this fund supports loans and scholarships for deserving students.

***University of Georgia Alumni Scholarships**

***The University of Georgia Alumni Foundation Merit Scholarships**
Up to 50 four-year scholarships awarded to entering freshmen (including one from each of the 10 congressional districts and five from the state-at-large), to be selected from that group of National Merit semifinalists who list the University as first choice of colleges; selection based on merit, individual stipends of up to $1500 a year based on National Merit Scholarship program's need analysis.

***University Regents Scholarships**

***Cecil Willcox Loan Fund**
Established by Mr. Willcox, this fund supports loans to male students of the University who are either born in or a resident of the state of Georgia.

"Z" Club Award
Tuition scholarships for outstanding freshmen for the sophomore year.

College of Agriculture

Agricultural Alumni Association Scholarship
Three awards per year, each in the amount of tuition for three quarters, to high school seniors planning on majoring in agriculture, based on financial need and a demonstration of scholarship record and leadership record and ability in high school and related activities.

ASAE Outstanding Freshman Scholarship
Established by the Georgia Section, American Society of Agricultural Engineers, this fund supports one award of $300 to a student with the most outstanding performance during the freshman year, based on scholarship, participation in ASAE activities, and future potential; recipient must enroll in the College of Agriculture during the sophomore year.

Borden Agricultural Award
A $500 annual award to seniors in the College of Agriculture with the best scholastic average who have taken two or more dairy science courses.

Borden Foundation Scholarship
One award of $300 annually to the senior who has compiled the highest grade average for all college work preceding the senior year.

Dairymen, Inc., Scholarship
Two awards of $350 dairy science majors based on scholarship, need and leadership.

Dairy Science Scholarship
Established by leaders in the dairy industry, this fund supports awards of approximately $300 to $450 each to dairy science majors; available to transfer students from junior colleges who have exhibited unusual scholastic ability.

Edgar Gilmer Dawson Scholarship Fund
Approximately 40 awards each year based on scholarship, leadership and economic need; amounts of awards vary, donated by E. G. Dawson Endowment Fund.

R. H. Driftmier Award
Established by Prof. Driftmier, emeritus head of the agricultural engineering department, this fund supports an annual award to a student selected by the head of the agricultural engineering department.

Exposition Mills Scholarship
One award of $500 to a dairy science major based on scholarship, need and leadership.

Farm Credit Bank of Columbia Scholarship
Four awards of $500 each to an outstanding freshman, sophomore, junior, and senior; recipients selected on the basis of scholarship, leadership, character, and need.

P. W. Fattig Entomology Scholarship
Established by the Georgia Entomological Society, this fund supports two awards of $554 to a junior or senior in entomology, based on scholarship, need and leadership.

Walter T. Forbes Award
One award of $500, usually to a senior in animal science, selected on basis of leadership activities and academic achievement; may be used to provide matching funds for federal or state loan programs.

Forbes Leadership Award
Established by the Benjamin P. Forbes Chocolate Co., Cleveland, Ohio, this fund supports one award of $100 to a senior in dairy science selected by the faculty as having the best potential for leadership.

Georgia Council of Farmer Cooperatives Scholarship
Two awards of $699 each based on need, scholarship, leadership and character.

Georgia Crop Improvement Association Scholarship
One award of full tuition for the academic year to a junior or senior in Agronomy, based on academic performance, need, extra-curricular activities and character.

Georgia Farm Bureau Federation Scholarship
Two awards of $250 per year for freshmen and sophomores; recipients selected after high school graduation on basis of scholarship, leadership and economic need by committee appointed by Bureau; parents must be members of Georgia Farm Bureau Federation; student must be enrolled in one of the agricultural sciences in the College of Agriculture.

Georgia Golf Course Superintendents Association Scholarship
One or more awards of $300 to $500 to a second or third quarter junior in turf management, based on need and scholarship.

Georgia Plant Food Education Society Scholarship
One award of full tuition for the academic year, usually to an Agronomy junior or senior in soils, based on academic performance, need, extra-curricular activities and character; two awards of $330 each to outstanding seniors in Horticulture based on same criteria.

Georgia Poultry Federation Scholarship
Three awards of $300 each for one year to students in poultry science on the basis of scholarship and need.

Georgia Poultry Industry Loan Fund
Established by the Georgia Hatchery Council, Gainesville, this fund supports loans of $250 per quarter to junior and senior poultry science students based on need.

Georgia Power Freshman Merit Scholarship
One award for full year's tuition to entering freshman with highest CEEB scores and high school average; must be a full-time BSAE student.

Georgia Seedmen's Association Scholarship
One award of full tuition for the academic year, usually to an Agronomy junior or senior, based on academic performance, need, extra-curricular activities and character.

Georgia Society of Farm Managers and Rural Appraisers Scholarship
One award of $200 based on financial need, scholastic achievement, character, leadership and future career plans.

Georgia State Florists' Association Scholarship
Established by Area III Florists, Macon, this fund supports one award of $300 to a Horticulture major interested in floriculture.

Gold Kist Scholarship
One award each year for $1800 ($600 per year during sophomore, junior, senior year) based on academic record, leadership and need; recipient must reside within Gold Kist operations territory.

Henry M. Gnann Scholarship
Established in memory of Mr. Gnann, who lost his life in Vietnam, by his parents, this fund supports an annual award to a student in the College of Agriculture with preference given to natives of Effingham County; recipient selected by committee on recommendation of teachers of agricultural subjects of Effingham County High School.

Ralph Johnson Memorial Scholarship
Funded by Georgia Weed Control Society; one award of full tuition for the academic year to an Agronomy junior or senior with an interest in weed control, based on academic performance, need, extra-curricular activities and character.

Kroger Company Scholarship
Two $250 scholarships awarded to Georgia high school graduates who enter the College of Agriculture or the School of Home Economics fall quarter.

Marbut Foundation Scholarship
One award of $300 per year to poultry science students based on scholarship.

Julian Miller Memorial Scholarship
Established by friends and admirers of Prof. Julian Miller, this fund supports one award of $50 to a rising senior in plant pathology, based on scholarship, need and leadership.

Moorman Company Fund Scholarship in Agriculture
Five awards of $500 per year based on scholastic experience, character, need and interest in agriculture; available to sophomore, junior and senior students in the College of Agriculture.

Ralston Purina Scholarship
One award of $650 for the senior year to the outstanding senior majoring in a field closely associated with the interests of the Ralston Purina Company; based on academic excellence (upper 25% of class), leadership, character, need and interest in agriculture.

Albon William Reed Memorial
Established by Mr. and Mrs. Thomas W. Reed in memory of their son, this fund supports loans to deserving students in the College of Agriculture.

Sears, Roebuck Foundation Scholarships
Annual scholarships to $300 awarded to enter-

ing freshmen in the College of Agriculture or the School of Home Economics.

John J. Sheuring Memorial
Established by the Georgia Society of Registered Professional Sanitarians and others in memory of Mr. Sheuring, this fund supports scholarships, awards, fellowships to students interested in the study of environmental sanitation, including the application of sanitation in the dairy and food industries; recipients recommended to the scholarship committee by the head of the animal and dairy science department.

Robert Strickland Agricultural Memorial Award Club Scholarships
Two annual awards of $400 each to juniors or seniors majoring in agricultural economics who have genuine interest in economics of agriculture and have maintained a high scholastic average.

Hugar F. Wilkes Scholarship
Donated by Irby Exley of Jacksonville, Florida; two awards of $500 each based on scholarship, need, leadership, and professional potential to a student enrolled for the BSAE degree.

Goodloe Yancey Scholarship
Established by Yancey Brothers Co., Atlanta, this fund supports two awards of $500 each to a sophomore and a junior in agricultural engineering based on scholarship, need, student activities and overall engineering promise.

Division of the Armed Services

Military Scholarships
Both the U.S. Army and the U.S. Air Force ROTC program award annual scholarships to students who will pursue a course of military studies leading to their commissioning as second lieutenants.

College of Arts & Sciences

Art Advancement Fund
A limited number of scholarships are awarded annually from the Fund for the Advancement of Art; recipients of the awards are selected by a committee composed of members of the art faculty and a representative of the students.

Band Scholarships
The University, in cooperation with the Athletic Association, provides limited numbers of scholarships to freshmen playing in the band and selected by the band director.

William Jennings Bryan Prize
Established by William Jennings Bryan, who contributed his honorarium to the University after a speaking engagement during the time he campaigned for the U.S. Presidency, this fund supports an award to the student submitting the best essay on American government.

Joe Brown Connally Scholarship.
This fund supports an annual $100 ($200 when accumulated income exceeds $250) scholarship to a junior, senior, or graduate student based on scholastic standing, interest and ability in the study of Georgia history; awarded to a student who will be attending the University the following year.

Debate Scholarship
One state matriculation fee scholarship awarded to an entering freshman who will participate in the debating program.

J. Stanley Gray Award
This award was established by Dr. Gray's widow and three children, in memory of Dr. J. Stanley Gray, a professor in the Department of Psychology. An annual award in the amount of $125.00 is to be given to an outstanding undergraduate student in psychology for 10 years. (The first award was in 1971).

Martha Jo Walker Johnson Memorial Fund
This fund was established in 1973 by Dr. Richard E. Johnson in memory of his wife. This fund is to provide one or more annual awards to graduate students majoring in Social Psychology who need financial assistance to complete research projects. Preference is to be given to female students, to be selected by a Committee composed of the Social Psychology Program faculty.

John Sanford Levy Memorial
Established in memory of Mr. Levy, a graduate student in marine geology by his wife and parents, this fund supports a scholarship to a graduate student in the geology department in the specific area of marine sciences, and scholarships to undergraduate students attending the summer field school of the department.

Music Scholarship
Established by Craig Barrow, Mrs. Robert Woodruff, Mr. Hatton Lovejoy, Mr. Hugh Hodgson and others, this fund supports scholarships to students in the field of music as recommended by the music department head.

Raymond Payne Award
An annual award to the outstanding senior majoring in Sociology, made in memory of Dr. Raymond Payne. Candidates are recommended to the Department with final approval by the University Scholarship Committee.

Henry L. Richmond Chemistry Fellowship
Established in memory of Mr. Richmond by his wife, this fund supports fellowships in chemical research.

Horace B. Russell Prize
This fund provides for two annual prizes. One is given for the best essay in ethics, and is awarded by the Department of Philosophy. The other is for the best essay in psychology, and is awarded by that Department.

Jessie Woodrow Sayre Prize
An annual $100 prize for the student of the College of Arts & Sciences who submits the best paper on world relations.

Robert A. Sheldon Award
Endowed as a memorial to a graduate student in marine biology by his wife, this fund provides an annual award of $500 to an undergraduate or graduate student in Zoology who proposes research at a field station or marine laboratory not connected with the University.

Martin Reynolds Smith Memorial Prize
Established by Mr. Reynolds' father, this fund supports an award granted to a graduate student who writes and has published the best piece on chemical research.

Charles M. Strahn Scholarship
Honoring a professor of civil engineering and mathematics from 1883 to 1945, the Charles M. Strahn Scholarship in mathematics annual award of $900 is given to an outstanding junior student majoring in mathematics, to be selected by the faculty of the mathematics department.

Scott Torgesen Award
This award was established by Mr. and Mrs. W. T. Torgesen in memory of their son. This fund supports an annual award to an outstanding junior majoring in psychology who shows the greatest promise for scholarly work in psychology, to be selected by the Head of the Department, or a Committee selected by the Head of the Department.

University Theatre Fund
Established from accumulated income of the University Theatre, this fund makes up to ten $100.00 awards a year as recommended by drama faculty.

Cecil Willcox Prize
Two prizes each year, one to a student for excellence in the study of French and one to a student for excellence in the study of German; prizes given in the form of a medal honoring the memory of the donor's father, who was a University professor.

Herbert Zimmer Psychology Award
Established by Paula Zimmer in memory of her son, this fund may be used for the benefit of the psychology department and students majoring in psychology at the discretion of the president of the University and the head of the psychology department.

College of Business Administration

Atlanta Federal Savings Scholarship
Two annual awards of $500 each to graduates of Atlanta, DeKalb and Fulton County high schools; one scholarship to a freshman entering business administration, the other to a senior in business administration, based on scholarship and need.

Alvin B. Biscoe Award
Awarded annually to a graduate student for in-state tuition based on academic achievement.

Alvin B. Biscoe-College of Business Administration Scholarship Memorial
Established in honor of the late Dr. Alvin B. Biscoe, former dean of faculties at the University, by his wife and supplemented by his son and friends, this fund supports scholarships awarded to deserving students in the College of Business Administration as selected by the dean or an appointed committee.

Teresa and Robert Blumberg Fellowship
A $2000 assistantship awarded annually to an MBA student with a high level of academic achievement.

Callaway Scholarship
One award of $500 to a junior with a scholastic rank in the upper third of his class, majoring in business administration; award renewable for senior year provided student maintains scholastic rank.

***Delta Airlines Scholarship in Aeronautical Administration**
This fund, administered through The University of Georgia Foundation, supports an annual award of $300 to a selected student majoring in business administration, available for both the junior and senior years.

William Gottlieb Fellowship
A $2000 assistantship awarded annually to an MBA student with a high level of academic achievement.

Walter E. Heller Fellowship
A $1000 fellowship awarded annually to an MBA student demonstrating a high level of academic achievement.

Mills Bee Lane Fellowship
Eight fellowships of $250 each per quarter

awarded to graduate students in finance based on academic achievement.

Department of Real Estate and Urban Development Scholarships
Approximately fourteen scholarships are awarded annually to undergraduate and graduate real estate majors based on academic achievement, leadership, and potential in the real estate industry.

Department of Risk Management, Insurance, and Management Science Scholarships
Scholarships of up to $600 annually to selected juniors and seniors majoring in insurance on the basis of academic achievement, leadership and interest in the insurance field.

State Farm Companies Foundation Fellowship
This fund supports, on a national basis, ten $1000 student fellowships to selected college juniors and seniors majoring in business or a business-related field who demonstrate strong leadership potential; funds may be used for the completion of the undergraduate program or for graduate study.

Union Bag-Camp Paper Corporation Scholarship
A $500 annual scholarship to a junior in the College of Business Administration, preferably majoring in industrial accounting and planning to make a career in industry; renewable for the senior year.

College of Education

Sallie Maude Jones Scholarship
Established by the will of Miss Jones, this fund provides scholarships to aid women students in the College of Education.

Floyd and Emily Jordan Scholarship
Established by bequest of Mrs. Emily Asbury Jordan for scholarship to students attending the University of Georgia College of Education.

Edwin D. Pusey Prize for Excellence
Elementary or General Secondary Education. Established by the will of Mrs. Betty P. Pusey as a prize for excellence to the outstanding graduating senior in elementary or general secondary education.

Flora Rogers Scholarship Fund
Established by the will of Miss Rogers, this fund provides scholarships for needy students attending the University of Georgia College of Education and preparing for public school teaching.

Hoke Smith Memorial
Established by various members of the Hoke Smith Memorial Commission in memory of the former U.S. Senator, this fund supports scholarships to students in agricultural and vocational education.

School of Environmental Design

Garden Club Scholarships
Several scholarships provided by various Garden Clubs available annually to Juniors and Seniors in the School of Environmental Design. Awards vary from $200–$600, selection based upon character, need, scholastic achievement or excellence in design.

Neel Reid Scholarship
Established by the Peachtree Garden Club in memory of Atlanta Architect Neel Reid. One annual award of $1500.00 to a landscape architecture senior based on academic achievement, character and Georgia residence requirement.

Neel Reid Travelling Fellowship
Established by the Peachtree Garden Club in memory of Atlanta Architect Neel Reid. $1500.00 awarded to one or more graduating landscape architecture seniors selected on the basis of academic achievement, character, Georgia residence requirement and the submission of an acceptable travel proposal.

School of Forest Resources

Atlanta Hoo Hoo Club #1 Award
One award of $500 per year to a rising second professional year student who has selected as his major concentration of study subjects of timber management and utilization, and who has a high professional potential.

Georgia Chapter, Society of American Foresters Award
One annual award of $300 to sophomores or juniors, based on academic and extra-curricular activities, preference given to residents of Georgia who began their programs at the University

Homelite Scholarship
Established by the Homelite Chainsaw Co., Port Chester, New York, this fund supports one award of $250 annually to a rising senior based on academic achievement and extra-curricular activities.

ITT Rayonier Scholarship
Established by the Southeast Timber Division, ITT Rayonier, Fernandia Beach, Florida, this fund supports two awards of $600 annually to rising seniors based on academic performance, activities, character and candidacy for future employment with ITT Rayonier.

Earl Jenkins Memorial Award
Established by Mrs. Gladys Beach, sister of Mr. Jenkins, a 1942 graduate killed in military action, this fund supports one award of $100 annually to an outstanding member of the junior class.

Ben Meadows Award
One annual award for in-state tuition to a sophomore, junior, or senior based on need, extra-curricular activities and character.

Edward John Noble Foundation Scholarship
One or more awards of $1000 to outstanding students who have completed their freshman year in the School of Forest Resources; summer work on St. Catherine's Island is required, for which the recipient is paid in addition to the award, renewable annually based on satisfactory on-the-job performance and continued academic excellence; based on scholarship, need, activities and character.

Society of American Foresters Award
The southeastern section of the society presents a one year membership in the society and a prize to the graduating senior who is judged by the faculty of the school as evidencing the most professional forestry aptitude.

St. Regis Undergraduate Scholarship
One award of $1000 annually to a rising junior, based on scholarship and extra-curricular activities; recipient may expect continuation of the award during senior year provided grades and conduct are satisfactory; summer employment with St. Regis during summer between junior and senior year will be offered.

Lucien A. Whittle Award
An award of $1000 per year, given by Brunswick Pulp and Paper Corporation, to a rising second professional year student who is industry oriented and who has a sound forestry commitment.

Graduate School

Robert A. Sheldon Memorial
Established by the wife of the late Mr. Sheldon, this fund supports one or more students studying in the field of zoology as selected by a committee.

School of Home Economics

Hazel and Gene Franklin Scholarship
Two scholarships are available, one undergraduate and one graduate. Selection is based on scholastic achievement, leadership ability and professional commitment.

James Coffee Harris Award
Established by Miss Agnes Ellen Harris in memory of her father, this fund supports an annual award to an outstanding junior in the School of Home Economics.

Grace Hartley Scholarship
Two scholarships are available to outstanding students majoring in Home Economics and Journalism. Funds may be used for the recipient's junior or senior year.

Opal Ward Jones Scholarship
A scholarship made to an outstanding junior on the basis of scholarship, leadership and professional commitment.

School of Journalism

Peyton T. Anderson Scholarships
Usually two $300 scholarships awarded to freshmen at the University of Georgia to study journalism; criteria include interest in newspaper career, evidence of outstanding potential in the field, financial need, and Georgia residency. Sponsored by personal donations from W. Thomas Johnson, Jr., publisher of the *Los Angeles Times*, and named for the former publisher of the Macon Newspapers who helped Johnson graduate from the University of Georgia School of Journalism.

Times Mirror Company of Los Angeles Scholarships
Matching grants—usually two of $300 each—to the Anderson Scholarships, with same criteria.

Georgia H. Boswell Journalism Scholarship
Full-tuition scholarship from the proceeds of the George H. Boswell Trust, left in the will of Mrs. Boswell; criteria include academic and journalistic achievement and potential, Georgia residency, with financial need considered.

Jamie Connell Memorial Award
Annual award for winner in School of Journalism's still photography contest; established by Miss Dura Connell in memory of her brother, a School of Journalism graduate who was a photographer and editor in Nashville, Georgia.

Kip Craven Memorial Award in Communication
Annual award for outstanding academic achievement by a senior in the School of Journalism; established by donations from individuals and from organizations of the Georgia Communications Council in memory of Kip Craven, public relations practitioner in Atlanta and leader in professional assistance to the University of Georgia School of Journalism.

Frank E. Gannett Newspaper Foundation Scholarship
A $750 award to a journalism student with outstanding potential for a newspaper career.

Jack McDonough Editorial Award
A $750 scholarship to attend the School of Journalism awarded to the high school student who writes the best editorial on free enterprise published in a school newspaper that is enrolled in the Georgia Scholastic Press Association and entered in GSPA competition; sponsored by the Georgia Power Company.

Reader's Digest Foundation Awards
Awards of approximately $100 each to cover expenses of travel by journalism students engaged in investigative reporting.

Regional and National Award Competition
The School of Journalism scholarship committee and dean select from among candidates one or more nominees for regional and national scholarships each year, including the following:

American Newspaper Publishers Association Scholarships for Minority Journalism Students; primarily for those interested in newspaper careers.

Business/Professional Advertising Association Scholarship; for senior interested in industrial advertising.

Foundation for Public Relations Research and Education; fellowship for graduate study in public relations.

Paul M. Lund Scholarship; for undergraduate study in public relations; funded by AT&T and administered by Foundation for Public Relations Research and Education.

Magazine Internship Program; summer programs for juniors sponsored by American Society of Magazine Editors with a grant from Magazine Publishers Association.

Radio & Television News Directors Foundation Scholarship; for juniors or seniors.

Sears Congressional Internship Program; winter internship program in Washington for journalism majors.

School of Journalism students may apply directly for a number of other journalism scholarships, including the following:

Atlanta Chapter, Women in Communications, Inc., Turner-Williams Scholarship; for a junior at an accredited school or college of journalism in Georgia; $500.

Atlanta Press Club Scholarship; for rising junior or senior majoring in journalism at an accredited college or university in Georgia; up to $500.

Georgia Association of Newscasters, Jim Lee Founder's Scholarship; for rising juniors or seniors majoring in broadcast journalism at a Georgia college or university; up to $250.

Georgia Press Association Education Fund; grants or loans for students interested in working with Georgia newspapers after graduation.

Ralph McGill Scholarship Fund; for juniors and seniors from 14 Southern states who have interest, aptitude in newspaper writing and editing, and need; up to $1500.

National Association of Broadcasters, Harold E. Fellows Memorial Scholarships; for employees or children of employees of NAB stations or networks.

School of Law

Claud B. Barrett Educational Fund
This fund supports loans or scholarships to law students recommended by the dean.

Nathan Burkan Memorial Competition
The American Society of Composers, Authors and Publishers annually offers a cash award of $100 to the student of the graduating class who submits the best paper on copyright law.

B. Hugh Burgess Award
Established in the will of Mr. Burgess, this fund is used to provide support for a worthy DeKalb County resident.

Bryant T. Castellow Memorial Scholarship
Established in memory of the late Mr. Castellow, U.S. Representative from Georgia, by his wife, this fund supports scholarships for students in the School of Law as selected by the dean.

Welborn B. Cody Memorial Scholarship Fund
Established in memory of the late Mr. Cody, senior partner in the Atlanta law firm of Kilpatrick, Cody, Rogers, McClatchey, and Regenstein, this fund supports scholarships for students in the School of Law as selected by the dean.

The Frank A. Constangy Memorial Scholarship Fund
This award was established in 1972 to honor Frank A. Constangy, a distinguished Atlanta labor lawyer and Georgia law graduate.

Georgia Beer Wholesalers Association Scholarship
This award was established in 1975 to aid a first year student who intends to practice law in his or her home state of Georgia.

The J. Rene Hawkins Memorial Scholarship
Established in 1972 by the Trustees of the Southern Federal Tax Institute, Inc., this

scholarship, in the amount of $2,000, is awarded annually to a third-year student who has demonstrated a substantial interest in the area of federal income taxation and who intends to practice in the southeastern United States.

University Law Class of 1933 Memorial
Established by members of the 1933 law class in memory of classmates, this fund supports an annual award to law students for excellence in their studies as selected by the dean.

Law School Fund Scholarships
These scholarships are given annually from a fund within the University of Georgia Foundation which is supported by law alumni donors.

Lawyers Title Award
The Lawyers Title Insurance Corp. of Richmond, Virginia, annually offers to a member of the graduating class an award of $100 for excellence in real estate law.

Lipshutz, Zusmann, Sikes, Pritchard and Cohen Bankruptcy Award
An Atlanta law firm presents a $250 award for excellence in the study of bankruptcy law.

Isaac Meinhard Memorial Award
An annual award to the outstanding student in the School of Law who has the highest academic average throughout his or her course of study. The award is made in the form of law books or other works of literature selected by the faculty.

Jessie and Dan McDougald Memorial Fund
This fund honors the McDougald family. Mr. McDougald was an honor graduate of the law class of 1910.

Benjamin Z. Phillips Fund
Established in memory of Mr. Phillips by his wife, this fund supports loans to second or third year law students.

The Milton M. Ratner Scholarship and Loan Fund
Established in 1973 by the Milton M. Ratner Foundation of Detroit, Michigan, this fund provides scholarships and loans to law students based on demonstrated academic ability and financial need.

Hughes Spalding Scholarships
These awards of $3,000 per year honor the late Hughes Spalding, Georgia law graduate and cofounder of the firm of King and Spalding.

Robert B. Troutman, Sr. Memorial Fund
This fund was established to give an annual award to the student named Editor-in-Chief of the *Georgia Law Review*.

Woodruff Scholarships
These scholarships presented in awards up to $3,000 per year are made possible by a generous gift from an anonymous donor in 1973 to the University of Georgia Foundation to establish the Woodruff Law School Scholarship Fund. The Woodruff scholarships, awarded to applicants who have demonstrated outstanding scholarship, are intended to bring highly qualified students to the law school.

Vasser Woolley Scholarships
These scholarships are presented in awards of $3,000 per year (special needs may justify higher stipends) to honor Vasser Woolley, Jr., a Georgia businessman who was killed in the Paris air crash of 1962 which took the lives of 122 Atlantans.

Applicants for the Hughes Spalding, Woodruff and Vasser Woolley Scholarships must be U.S. Citizens who have graduated from an accredited college or university. Each must include with the application three letters of recommendation and an essay of approximately 1000 words outlining his or her life's ambition and goals.

School of Pharmacy

J.D.S. Coleman Scholarship
Awarded to Macon area residents.

Dargavel Foundation Loan Fund
Established by the Dargavel Foundation of the National Association of Retail Druggists, this fund supports loans to pharmacy students based on need.

Eckerd Drugs, Inc., Scholarship

Georgia Pharmaceutical Association Scholarship
Pre-pharmacy scholarships of $300.

Women's Auxiliary of the Georgia Pharmaceutical Association Loan Fund
Provides loan funds to pharmacy students based on need.

Mary Lou Gilleland Memorial Award

Kappa Psi Scholarship

Phi Delta Chi Scholarship

Randolph-Mercer Memorial Scholarship Fund
Established in June 1975 by Dr. Ted D. Cash of LaFayette, Georgia for the purpose of providing tuition scholarship(s) to pharmacy student(s) as an annual memorial to Dr. Mercer and Dr. Randolph.

Jacob G. Smith Scholarship
Awarded to Savannah area residents

University Foundation

Alumni Society Scholarship Fund
Established for the purpose of receiving any earmarked gift to the annual fund for scholarships and award them through the University office of financial aid.

American Pro Art Quartet Scholarship Fund
Established 1976 by Mr. John William Cabin to provide a scholarship for talented and needy students in string music.

Arts and Sciences Development Fund
The purposes of this fund are to provide student scholarships, to promote faculty development and to provide for other educational needs at the discretion of the dean.

Athens Federal Savings and Loan
Established in 1963 by Howard McWhorter, then President of Athens Federal, and its boards of directors for awarding an annual scholarship.

Athens Rotary Club – E. B. Mell Scholarship
Covers in-state tuition with the recipient selected by the scholarship committee of the Athens Rotary Club.

Elizabeth B. Y. Banner Fund
The purpose of this fund is to provide scholarship support to students majoring in guidance and counseling.

Blue Key Scholarship Fund
Established in 1952 the income of which is to be used for scholarships as the Blue Key Honor Society, with the approval of its faculty advisor, directs.

Nina Ray and Bertram S. Boley Scholarship Fund
Scholarship established by Mr. and Mrs. Bertram S. Boley of Atlanta with contribution of $1,000 annually made available in December. May be an undergraduate or graduate student. No preference whether it be a boy or girl. Mr. and Mrs. Boley established this fund in 1969.

Robert Brown – Law Fund
Created in 1956 in memory of Robert Brown (who after graduating in 1941, gave his life for his country in World War II) to encourage scholarships in, and to provide for lecturers for, the Law School at the University.

Betty C. Cabin Scholarship Fund
Provide an annual scholarship for a student in Art based on following qualification 1) Outstanding Character 2) Proven Academic & Professional record 3) Financial Need.

Marey Jo Carey Memorial Scholarship
A memorial scholarship in memory of Marey Jo Carey who died in 1964 from injuries received in an automobile accident. The fund was established in 1965 by family and friends of Marey Jo Carey. Academic achievement, campus activities, and financial needs are taken into consideration in selecting a scholarship winner.

Thomas D. Carey and J. C. C. Black, Jr. Memorial
Established in 1957 by will, by Muriel Black Carey in memory of her husband and her brother, as a perpetual fund, the income from which is used to enable deserving young men from the Academy of Richmond County or the Junior College of Augusta to attend the University.

Class of 1961 Fund
Funds are added to the unrestricted fund of the University Foundation, the identity and pro rata value of the class shall be retained; that income will be used as determined by the University Foundation after affording opportunity to make recommendations to such representatives; until determined differently, income from the funds shall be used to assist *Merit Scholar* or Scholars at the University.

Class of 1962
See Class of 1961 (same as above)

Class of 1963
See Class of 1961

Class of 1964
See Class of 1961

Class of 1965
See Class of 1961

Emory L. Cocke (Agricultural Exposition Foundation Fund)
Founded in 1972 by Emory L. Cocke for the purpose of providing scholarships to deserving students in the College of Agriculture, preferably in the Departments of Dairy Science, Animal Husbandry or Vet Medicine.

College of Education
This fund was established to provide a tuition scholarship based upon need and merit for an undergraduate student in Education.

Malon C. Courts – Scholarship Trust
The earned income is to be used for scholarship grants for distinguished students who have obtained academic excellence. Amount to be given is to be determined by the UGA President. The fund was set up on January 24, 1972.

Charles L. Darby (Psychology)
Established in 1974 for the purpose of awarding annually one of the department's graduate assistants in recognition of outstanding teaching contributions in the Department of Psychology.

Tucker Dorsey Memorial Scholarship (Blue Key)
A memorial scholarship set up in memory of Tucker Dorsey, son of Jasper Dorsey, who died from injuries sustained in an auto accident. Scholarship awarded to a male student who is a member of Blue Key and selected by the Blue Key Fraternity.

Ecology Award Fund (Dr. Eugene P. Odum)
Originated by Eugene P. Odum in 1974 to be used for awards for students in Ecology. The award recipient is to be determined by the Institute of Ecology.

A. S. Edwards Award
Established in 1956 by the Georgia Chapter of Psi Chi to encourage scholarship and research in the Department of Psychology by providing an annual award, out of income to a student of high scholarship in that department.

Henry Field Memorial Scholarship
Established by Professor David Meade Field in memory of his son, Henry, an outstanding tennis player at the University of Georgia. The purpose is to provide a tuition scholarship on the basis of need and merit for an undergraduate male student.

Carlyle Fraser Scholarship
This fund is used to attract superior students to the University of Georgia for undergraduate study.

Georgia Science and Engineering Fair
Established to administer all funds received in support of the Fair; to allow withdrawals for expenses incurred by the Science Fair Committee and the Fund Representative on behalf of the Georgia Science and Engineering Fair.

L. L. Hendren
Established in 1960 by some former students of Dr. L. L. Hendren. Earned income will be used as a scholarship to an undergraduate majoring in physics or astronomy with emphasis on academic standing and need.

Elmo C. Hester – Scholarship Fund
Established to provide scholarship award(s) to student(s) in the College of Agriculture and School of Forest Resources on the basis of need and merit.

Richard Lee Hickey
Established from Mr. Hickey's estate for the support of the National Merit Scholarship Program.

Roberta Hodgson Loan & Scholarship Fund
Created in 1955 by Miss Roberta Hodgson to provide, out of income, scholarships for, or loans to, gifted students in need of financial assistance.

Horticulture – Plant Pathology Scholarship
For the purpose of providing scholarships in Plant Pathology and Horticulture.

Inter-Fraternity Council – Sophomore Scholarship
Established in 1950 to encourage scholastic achievement and the development of character and personality in freshmen, by providing scholarships, from income, for outstanding sophomores.

Wych Knox Scholarship Fund
Scholarship in College of Business Administration. Based on need and qualification.

Frederick Loef Scholarship
Established in December of 1961 by Frederick J. Loef of Athens, in memory of his grandparents, Sender and Blume Gottlieb. The scholarship was created to assist worthy students.

Harry Loef Scholarship Fund
Tuition scholarship for deserving students. Established in 1960 by Mr. and Mrs. Harry Loef of Athens.

M. G. Michael Award
Established in 1946 by LeRoy and David Michael in honor of their father to provide an annual award of income to a member of the faculty for excellence in research.

Vera A. Milner Scholarship Fund
Funds used to attract superior students to the University for undergraduate study. The Morehead and Rhodes Scholarships exemplify the caliber of scholarship intended. Financial need is not a factor since the primary desire of the Vera A. Milner Scholarship Fund is to help the university recruit the very best undergraduate students.

Modern Foreign Language
Scholarship for foreign study. Income to be used after fund reaches $5,000.

Mortar Board Scholarship
Fund established to provide scholarships from one to three quarters for rising senior student based on need and merit defined as scholastic, leadership, and service to the University of Georgia.

Jennie Belle Myers
This fund was established in 1951 to provide assistance, out of income, for women students of good scholastic record and character who need financial help to complete work for a Bachelor's degree.

Henry E. Newton Foundation
Mr. Henry Newton of Decatur, Georgia created this fund in order to make loans on the rate basis

of need and merit to be repaid at an interest rate of 3% with accrual commencing on the first day of the tenth month after termination of student status. Repayment is at the rate of 1% of the original loan balance monthly with a minimum payment of $15.00. The Office of Financial Aid will be responsible for determining student recipients and for collection on the loan.

Robert E. Park Memorial Fund

Established in 1961, to honor the former head of the Department of English, by the Class of 1912 under the leadership of Mr. Marvin B. Perry. Approximately $300 is given each year to an outstanding graduate student in English faculty. The fund is also available for any project that benefits the academic program in English.

Poss Famous Foods – Robert E. Poss Memorial Scholarship
Scholarship created by Robert E. Poss, Jr. in memory of his father (R. E. Poss, Sr.) Awarded to a deserving student from Clarke County on the basis of academic merit and need.

Psychology Award (Mrs. Gunborg Gray)
Scholarship award from Mrs. Gunborg Gray and children to be awarded annually for 10 years to an undergraduate student with a major in psychology. The student would be selected by a committee from the faculty in the Psychology Department. The award is in memory of her husband, Professor J. Stanley Gray, who was a professor of psychology at the University of Georgia.

J. A. Redfearn
This is not a separate fund. All gifts are deposited in the R. C. Wilson Fund. The R. C. Wilson Fund was established in 1957 by I. Z. Harris and other friends of the School of Pharmacy to provide, out of income, the annual Robert C. Wilson prize to the outstanding Pharmacy senior, the I. Z. Harris prize to the outstanding Pharmacy junior, and other funds for research and scholarship.

C. Elton Richards
Created from the Estate of C. Elton Richards for the support of the National Merit Scholarship Program.

Richmond, Virginia Scholarship Fund
The purpose of this fund is to award an undergraduate scholarship to a student based on need and merit. The fund was created by the Richmond, Virginia Alumni.

Robinson Fund
Income to be used for the promotion of the College of Education, with special reference to the training of teachers, scholarships, fellowships and for the promotion of specialization in this field by students, instructors or professors.

Mary Rosenblatt – Art Scholarship Fund
Established in 1949 by Mr. and Mrs. W. L. F. Rosenblatt in memory of their daughter who was a member of the faculty of the University's Department of Art. The income from the fund shall be used to aid needy and worthy students in the Art Department at the University.

School of Social Work
Established to provide emergency loans and grants to deprived students; not to exceed $100/student; to facilitate the attainment of grants for students/faculty funding by using Foundation funds for development expenditures, which are not permitted by state regulations pertaining to public funds; and to reimburse a portion of the costs of entertaining visiting scholars, consultants, site teams, faculty, staff and students.

Alfred W. Scott, Sr. – Scholarship Fund
Established in 1974 by Mrs. Scott in memory of her husband to provide a scholarship for a Chemistry major and where possible a senior student majoring in Organic Chemistry would be given preference for the scholarship. The selection would be made by the Department Head of Chemistry or a committee named by him. The recipient should be engaged in the professional program and taking American Chemical Society approved courses. The awarding of this scholarship should be based on a minimum grade point average of 3.0 and need.

Ted L. Simons Memorial (Physics)
This is an award established by friends of Ted Simons to recognize an outstanding junior majoring in Physics.

SNS–GSTC Scholarship
Scholarship established by Alumni Association of SNS in memory of Presidents Bradwell, Branson, and Pound. The scholarship given annually since 1960 to a high school graduate in the State of Georgia. The recipient must be of good moral character with good grades and need of financial help with a definite planned career in teaching or related fields who will teach in Georgia. A Committee to select the winner(s) shall include representatives from the Scholarship Committee of the University of Georgia, University of Georgia Alumni Society and three alumni from State Normal School of GSTC. These five shall have the right to add members to the selection committee if needed.

SNA – Class of 1925 Scholarship
Established to award a scholarship to a graduate student who is receiving a degree in guidance counseling.

Spartanburg Kennel Club
Established to provide tuition scholarship(s) for student(s) in the College of Veterinary Medicine from the State of South Carolina. Established in 1975 by the Spartanburg Kennel Club Scholarship Committee.

Unearmarked – Foundation
The earned income from the unrestricted portion of the University of Georgia Foundation Fund goes primarily to the supplementing of salaries for outstanding professors on the University campus, support of the National Merit Scholarship Program and to provide for Foundation Distinguished Professorships.

Veterinary Medicine Alumni Association
Fund created to build a permanent endowment for the benefit of the School of Veterinary Medicine. Fund administered by the Executive Committee of Veterinary Medicine Alumni Association. Funds shall be used for all types of applied research which cannot be financed any other way . . . faculty awards to keep or recruit outstanding professors and/or research experts . . . improvements in the Veterinary Medicine Library . . . material or equipment not obtainable otherwise . . . special seminars or conferences . . . short courses or lectures by outstanding authorities in their fields that cannot be financed in any other way . . . fellowships (graduate) and scholarships (undergraduate) to encourage and assist worthy students and generally to accomplish or obtain any worthwhile improvement in the school upon consideration and approval of the aforesaid committee.

Marilyn F. Vincent
Established in 1975 to assist graduate students who are working in Health, Physical Education and Recreation and/or provide equipment for research laboratories.

Thomas Pleasant Vincent Memorial Fund
Established in 1974 by Miss Otey Vincent of Athens in honor of her father, Thomas Pleasant Vincent, who was a member of the Class of 1875 to provide a tuition(s) scholarship(s).

Charles H. Wheatley Award (Physics)
Originated in 1952 by Charles H. Wheatley, class of 1920 with an annual award of $100 in memory of Mr. Wheatley's father. Awarded to a selected Physics major; top junior or senior.

Allie Prickett Williams Scholarship Loan Fund
Scholarship Loans after Sophomore year. To be paid back after 3rd month of work at a minimum of $30.00 per month.

R. C. Wilson (School of Pharmacy)
Established in 1957 by I. Z. Harris and other friends of the School of Pharmacy to provide, out of income, the annual Robert C. Wilson prize to the outstanding Pharmacy Senior, the I. Z. Harris prize to the outstanding Pharmacy Junior, and other funds for research and scholarship.

College of Veterinary Medicine

Allied Foods Scholarship
A gift of $250 awarded to a third year student selected on the basis of scholarship, professional proficiency and a demonstrated interest in practicing veterinary medicine after graduation.

ALPO Scholarship
A $1,000 scholarship presented to a first-year student selected by the Scholarship and Awards Committee.

Downing-Nix Trust Award
Earnings of a trust fund in the amount of approximately $200 awarded to a deserving student of veterinary medicine.

J. Wen Lundeen Award
A $500 scholarship presented to a deserving student in need of financial assistance who has displayed an interest in breeding and/or raising dogs as well as in canine medicine and surgery.

Nancy McFadden Memorial Gift
A $100 scholarship presented to a student with financial need in any of the four classes.

Margaret Peeples Award
Earnings from the Margaret Peeples Trust Fund presented to a deserving female student selected on the basis of financial need.

Pfizer Scholarship
A scholarship of $400 presented to a third year student selected on the basis of scholarship, leadership ability and financial need.

Southeastern Professional Consultants Scholarships
Four $250 scholarships awarded to students of veterinary medicine representing each of the four classes, based on financial need and evidence of improving scholastic accomplishment.

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